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GRADE 3 STUDENTS' COGNITIVE AND AFFECTIVE RESPONSES TO WEARING REPRODUCTION COSTUMES IN THE EDMONTON 1881 SCHOOLHOUSE

by

(C)

Becky G. Dahl

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF SCIENCE

IN

CLOTHING AND TEXTILES

FACULTY OF HOME ECONOMICS

EDMONTON, ALBERTA

FALL, 1988

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THE UNIVERSITY OF ALBERTA

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled Grade 3 Students' Cognitive and Affective Responses to Wearing Reproduction Costumes in the Edmonton 1881 Schoolhouse submitted by Becky Dahl in partial fulfilment of the requirements for the degree of Master of Science in Clothing and Textiles.

Supervisor - A. M. Lambert

N. Fetterman

M. P. Browne

Date: Oct. 14 / 1988

ABSTRACT

The purpose of this study was to evaluate Grade 3 students' cognitive, affective and long-term responses to wearing authentic reproduction costumes in the Edmonton Public Schools Archives and Museum 1881 Schoolhouse. In addition, analysis was aimed at determining if a relationship existed between students' cognitive and affective responses to costume and noncostume components. The theoretical framework for this research was based on Screven's goal-referenced approach to evaluation and Dale's cone of experience.

The sample consisted of classes who had booked tours to the Edmonton Public Schools Archives and Museum 1881 Schoolhouse. Six classes (80 subjects) comprised the previsit group, tested prior to their participation in the 1881 schoolhouse program. The experimental group, who wore authentic reproduction costumes (3 classes - 44 subjects), and the control group, who did not wear authentic reproduction costumes (2 classes - 17 subjects), were both tested following their visit to the 1881 schoolhouse.

A statistical analysis was performed on data received from the objective questionnaire which measured students' cognitive responses, the Likert rating scale which measured students' affective responses, and the open-ended question which measured students' long-term recall. Results from two-tailed t tests showed that a significant difference existed between the control and experimental groups in terms of their cognitive and affective scores to the costume

component. No significant difference was found between these groups in terms of their cognitive and affective responses to the noncostume component and the number of costume and noncostume descriptions which were mentioned as part of the long-term recall measure. Students who wore the reproduction costumes, however, were more likely to use specific descriptions and subjective terms to describe clothing. Pearson correlation coefficients, used to test correlation among cognitive costume and noncostume responses and affective costume and noncostume responses, showed a significant relationship between experimental group subjects' affective response to the noncostume component and their affective response to the costume component. Results from this study support the use of reproduction costumes for Grade 3 children to wear in the Edmonton Public Schools Archives and Museum 1881 Schoolhouse.

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Various organizations were instrumental in the execution of this study and I am grateful for their support. These include the Alberta Museums Association which provided a Special Projects Research Grant to support research in museums across Canada and the Job Creation

program which provided funds to hire three Summer Employment - Experience Development positions and five Section 38 Manpower positions to work on constructing reproduction costumes.

I wish to thank the staff from museums which I visited while researching 1880's children's clothing styles. Their help to locate and discuss 1880's children's clothing from their collections and permission to document and draft patterns of these garments was appreciated.

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I wish to acknowledge my family, including grandparents and sister Susan for their lifelong support and nieces Nadine and Melanie (ages 2 and 4) who showed me that costumes as simple as a New Years Eve crown worn on one's head and a scarf wrapped around the neck has the power to transform two little girls into Cinderella and Prince Charming. A very special and loving thanks go to my parents Ruth and Svend who have always had faith in my abilities and have given me the encouragement to achieve the goals which I have set for myself.

TABLE OF CONTENTS

CHAPTER PAGE

1. INTRODUCTION....1
   1.1. Purpose and Statement of the Problem....1
   1.2. Research Objectives....4
   1.3. Null Hypotheses....5
   1.4. Justification....7
   1.5. Limitations....10
   1.6. Definitions....12

2. REVIEW OF THE LITERATURE....17
   2.1. Museum Evaluation....17
   2.2. Educational Programming in Museums....25
   2.3. Experiential Learning Theory....28
   2.4. Replications in Museum Programming....34

3. METHODOLOGY....39
   3.1. Theoretical Framework....39
   3.2. Description of the Educational Program....41
   3.3. Description of Reproduction Costuming....43
   3.4. Committee Approval....46
   3.5. Pilot Test....46
   3.6. Sample Selection....48
   3.7. Sampling Procedure....52
   3.8. Instruments....57
      3.8.1. Previsit Group Test....57

CHAPTER PAGE

3.8.2. Control and Experimental Groups' Test.....58
3.8.2.1. Student background and demographic measure.....58
3.8.2.2. Cognitive measure.....59
3.8.2.3. Affective measure.....61
3.8.2.4. Long-term impact measure.....63
3.8.3. Teacher Questionnaire.....64
3.9. Statistical Analysis.....64

4. FINDINGS AND DISCUSSION.....66
4.1. Student Background and Demographic Findings.....66
4.2. Previsit Group Response.....80
4.3. Control and Experimental Groups' Cognitive Responses.....82
4.4. Control and Experimental Groups' Affective Responses.....95
4.5. Control and Experimental Groups' Long-term Responses.....105
4.6. Relationship among Cognitive and Affective Responses.....113
4.7. Supplementary Qualitative Data.....117

5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.....119
5.1. Summary and Conclusions.....119
5.2. Recommendations for Future Research.....124

BIBLIOGRAPHY.....133

APPENDIXES PAGE

A. Dale's Cone of Experience....144
B. 1881 Schoolhouse Program Handout....146
C. Description of Agency....154
D. Class Photographs (1882, 1888)....161
E. Research Form to Document Children's Clothing....164
F. Reproduction Costuming....170
G. Line-drawn Illustrations of Costume Styles....179
H. Photograph of Children Dressed in Reproduction Costumes...182
I. Edmonton 1881 Schoolhouse Objectives....184
J. Letter to Control and Experimental Groups....189
K. Control and Experimental Groups' Consent Form....191
L. Parent Consent Form....193
M. Letter to Previsit Group....195
N. Previsit Group Consent Form....197
O. Letter to Control Group....199
P. Letter to Experimental Group....202
Q. Letter to Parents....205
R. Teacher Costume Instructions....207
S. Sizing Sheet....210
T. Student Costume Instructions....213
U. Letter Explaining Costume Shipment....216
V. Previsit Group Test Instrument....218
W. Control and Experimental Groups' Test Instrument....237
X. Long-term Program Impact Question....254
Y. Teacher Questionnaire....256

LIST OF TABLES

TABLE	DESCRIPTION	PAGE
1.	Frequency and Percent Distribution of Subjects for the Sex Variable	68
2.	Frequency and Percent Distribution of Subjects for the Number of Museums Visited	69
3.	Frequency and Percent Distribution of Subjects for the Number of Field Trips Named	70
4.	Frequency of References for the Field Trip Groupings	72
5.	Frequency and Percent Distribution of Subjects for the Preferred Subject Area	74
6.	Frequency and Percent Distribution of Subjects for the Preferred Subject Reasons	77
7.	Frequency and Percent Distribution of Subjects for the Perceived Learning Style	78
8.	Mean, Minimum, Maximum and Standard Deviation of the Previsit Group (N = 80) for Test Scores	81
9.	Two-tailed t Tests on Control and Experimental Groups' Cognitive Scores	85
10.	Two-tailed t Tests on Males' and Females' Cognitive Scores	94
11.	Two-tailed t Tests on Control and Experimental Groups' Affective Scores	98
12	Pearson Correlation Coefficients for Control Group on Subdivided Affective Scores	102
13.	Pearson Correlation Coefficients for Experimental Group on Subdivided Affective Scores	103
14.	Two-tailed t Tests on Males' and Females' Affective Scores	105
15.	Two-tailed t Tests on Control and Experimental Groups' Appropriate Long-term Scores	109

TABLE	DESCRIPTION	PAGE
16.	Pearson Correlation Coefficients for Control Group on Affective and Cognitive Costume and Noncostume Scores	114
17.	Pearson Correlation Coefficients for Experimental Group on Affective and Cognitive Costume and Noncostume Scores	115

CHAPTER 1 - INTRODUCTION

1.1 Purpose and Statement of the Problem

Educational programming in museums is based on the belief that museums should be held accountable for visitor learning (Chambers, 1984; Graburn, 1977; Griggs, 1981; Herbert, 1982b; Shettel in Hicks(Ed.), 1986). This is contrary to the past notion that if the visitor failed to learn from an exhibit, it was due to his or her own inadequacy (Chambers, 1984; Griggs, 1981).

Children are one target audience for whom educational programs have been planned, utilized and evaluated. The educational needs of children differ from adults, causing program requirements to vary accordingly (Pohle, 1979). Tilden (1977) stressed this point, indicating that "interpretation addressed to children (say, up to the age of twelve) should not be a dilution of the presentation to adults, but should follow a fundamentally different approach. To be at its best it will require a separate program" (p. 47).

The primary aim of current programming for children is to satisfy their need to know "what it feels like" (Tilden, 1977, p. 47). Children are encouraged to experience a phenomenon or activity through use of their senses. It is assumed that through multisensory involvement, students' understanding and long-term learning will be enhanced (Shettel, 1973; Smith & Nagel, 1969). In effect, children

need "to go, to see, to feel, to recapture, to relive" (Schools Council, 1972 , p. 9).

Limitations of direct experiences which children encounter through life implies that meaningful experiences need to be planned (Buchmann & Schwille, 1983; Smith & Nagel, 1969). This makes available to the child, experiences which would not be available in the natural environment. In this research, going to school in the 1880's serves as an activity which children could not experience in their present lives.

The fragile nature of museum costumes suggests that they cannot be handled or tried on by children. If any tactile exposure is possible, this must be through the use of reproduction costumes. Fairley (1977) stated that even if the real costume could be worn, a replication could provide the students with an equally true historical experience. He noted that the original costume was new when it was initially worn. Consequently, the feeling created by trying on a replica could more closely approximate the feeling that the first wearer may have had.

Evaluations directed toward the study of discovery learning and children's active involvement with objects and phenomena tend to stress scientific concepts rather than historical information (Commission on Museums for a New Century, 1984). Mechling and Oliver (1983) indicated that interest in the discovery oriented approach to teaching science developed in the 1950's as a reaction to the Soviet launching of Sputnik. Since that time, a number of studies have focused on students learning about science through active

involvement and discovery (Bennett, 1965; Borun, 1977; Bredderman, 1982; Eason & Linn, 1976; Flexer & Borun, 1984; Harvey, 1951; Lundgren, 1979; Perkes, 1979; Shettel, 1968; Shymansky, Kyle & Alport, 1982; Wright, 1980; Yager, 1983).

Evaluation research on the effectiveness of history teaching through active discovery tends to be presented, in the literature, as subjective opinions rather than data supported by empirical investigation. There tends to be an agreement that history can be made more understandable through exposure to concrete objects (Fairley, 1977; Shuh, 1982) which have been referred to as a "tangible link with the past" (Fairley, 1982, p. 2). Costume is one component of historic study which has been advocated to make the past more understandable. Fairley noted that costumes can enhance students' participation in a vicarious experience to recreate the past. Empirical research on student response to wearing reproduction costumes, however, is extremely limited. As with literature on teaching history through the use of concrete objects, costuming literature is based primarily on intuition.

This study addressed this issue in the following problem statement:

> What relationship does reproduction costuming of the entire Grade 3 class at the Edmonton Public Schools Archives and Museum 1881 Schoolhouse have with the participants' cognitive and affective responses to costume and noncostume components of the educational

program and on students' long term recall of costume and noncostume details, as compared to the existing program?

1.2 Research Objectives

The objectives set for this study are as follows:

1. To determine if a relationship exists between the costuming of Grade 3 students in the Edmonton Public Schools Archives and Museum 1881 Schoolhouse and:

   a) their cognitive response to the noncostume component of the program.

   b) their cognitive response to the costume component of the program.

   c) their affective response to the noncostume component of the program.

   d) their affective response to the costume component of the program.

   e) their long-term recall of appropriate noncostume details

f) their long-term recall of appropriate costume details

2. To determine if interrelationships exist among students' cognitive and affective responses to the costume and noncostume components of the program.

1.3 Null Hypotheses

The null hypotheses, developed from the objectives set for this study, are as follows:

1. There will be no significant relationship between the costuming of Grade 3 students in the Edmonton Public Schools Archives and Museum 1881 Schoolhouse and:

   a) their cognitive response to the noncostume component of the program

   b) their cognitive response to the costume component of the program

   c) their affective response to the noncostume component of the program

d) their affective response to the costume component of the program

e) their long-term recall of appropriate noncostume details

f) their long-term recall of appropriate costume details

2. There will be no significant relationship between students' cognitive response to the noncostume component of the program and:

a) their affective response to the noncostume component of the program

b) their affective response to the costume component of the program

c) their cognitive response to the costume component of the program

3. There will be no significant relationship between students' cognitive response to the costume component of the program and:

a) their affective response to the noncostume component of the program

b) their affective response to the costume component of the program

4. There will be no significant relationship between students' affective response to the noncostume component of the program and their affective response to the costume component of the program

1.4 Justification

The museum and historic site's role as educator of the visiting public has become a concern for personnel working in these institutions (Chambers, 1984; Griggs, 1981; Herbert, 1982b; Winstanley, 1967). Discovery learning, which actively involves students, has been incorporated into museum educational programs with the aim of fostering a deeper understanding of and an enthusiasm toward the concepts presented.

Reproduction costuming for students is one means used at various historic sites to promote an understanding by children of the concepts presented. Evaluation, however, tends to rely on intuition rather than empirical research. Harrison (1967) noted that

> a girl who walks among eighteenth century furniture dressed in a good reproduction of the costume of the period feels something of what life was like 200 years ago, more deeply than could result from mere seeing or even handling the furniture. Her classmates, too, will notice that she walks differently in the long dress,

> that the tilt of her head is altered by the weight of the wig and that her gestures become almost elegant. They will sense the past more vividly for seeing her walk, even though the costume she wears was made only yesterday. (p. 2)

Intuitive speculation on the effectiveness of reproduction costumes tends to be agreed upon. A need exists, however, for research in this area to determine if reproduction costumes enhance students' cognitive and affective responses. Wells (1988) studied Grade 4 and 5 children's reaction to interpreter costume. Her study revealed that children indicated a desire to wear costumes themselves. Wells suggested that further research be conducted in this area.

Testing the effect of costuming on student response was intended to help indicate if the time and expense required to costume a group of students is justified. A secondary cost which needs to be considered is students' time. A study by Parr (1967) found that museum time and school time are equivalent, indicating that the amount of information learned in each setting is the same. Consequently, the museum experience must be carefully planned and evaluated to determine the most effective time use.

Classroom teachers, responsible for students' education, require that field trip experiences provide children with a meaningful understanding of the topic covered (Parr, 1967). It is essential that the museum and historic site meet these needs. Chapman (1982) and Marcouse (1974) noted that museum displays used in isolation may fail to convey the true understanding possible through concrete objects. For this reason, education is necessary to encourage the

development of a meaningful learning experience. Sterling (1976) stated, in reference to a museum object, that an educator should "make it alive, make it more than just an object, but make it an object with meaning" (p. 62). History teaching is strengthened through the use of artifacts representing an era or event. Shuh (1982) indicated that "the major reason for studying history was to learn about our past and thus understand something of the dimensions of our present and the possibilities of our future" (p. 11). This goal is best met through the use of objects which encourage the student to look, examine and draw conclusions. Proctor (1973) stated that through this education "the student or child may discover for himself the pleasure of learning more about the past and hence, about himself" (p. 23).

The goal of museums in education identified by Proctor (1973) can be directly related to the home economics research goals specified by Schlater (1970). Proctor identified the purpose of museums in the following passage.

> The most important reason for making the best use of museum collections is stimulation - stimulation to learn and to enjoy life more richly to know more of oneself and of others. Such stimulation comes through contact with objects, with the creative work of artists and craftsmen, with the achievements of great minds in science and technology and with the products of history. (p. 29)

The products of history can relate to a study of historic costume, specific to this research project. The statement by Proctor

regarding the purpose of museums, being to "enjoy life more richly to know more of one self and of others" (p. 29), supports the research goals in home economics. Schlater stated that home economics research should "maximize the satisfaction and well-being of individuals and families through increasing knowledge and understanding of man and his immediate environment - his physical, cultural and social milieu" (p. 15). An evaluation of reproduction costumes, for children to wear in a history oriented educational program, achieves this goal. When children develop a clear understanding of the past, their image of the present and of the future becomes more meaningful. This study is aimed at evaluating the costume component of an educational program designed to meet this need. Shettel (1968) stated that "until those responsible for the preparation of scientific and technical exhibits become more analytic and more concerned with objectives and evaluation, little real advances in the field will be made" (p. 151).

1.5 Limitations

1. Only those schools that booked a trip to the Edmonton Public Schools Archives and Museum 1881 Schoolhouse were used in the sample. This study is not representative of all schools in the Edmonton area.

2. The conclusions were limited to the study of Grade 3 students. No attempt was made to determine the cognitive and affective responses of students from other grade levels.

3. Results from this research project were based on data collected from a limited number of classes (three experimental group classes, two control group classes and six previsit group classes).

4. Results from this research project can not be generalized to other populations.

5. Results were due to the total effect of including costume. It can not be determined if the results were caused by the visual effect created by other students wearing costumes, the tactile exposure to a student's individual costume or if they were caused by a combination of these two features.

6. Though every effort was made to control extraneous variables, the final results may have been affected by external factors which were beyond the control of this researcher.

7. Results from this research project were based on the premise that control and experimental groups were equivalent prior to testing.

8. Though every effort was made to insure objectivity in research design, the closeness of the researcher to the costuming project could have biased the research results.

1.6 Definitions

Affective Response - students' attitudes toward costume and noncostume components of the educational program conducted at the Edmonton 1881 Schoolhouse and the extent that they feel like students from 1881, as measured by a summated rating scale.

Appropriate Costume Detail - any characteristic (objective or subjective) which accurately defines clothing styles which could have been worn by students in the Edmonton school during the period from 1881 to 1888.

Cognitive Response - the knowledge students have of costume and noncostume components of the educational program conducted at the Edmonton Public Schools Archives and Museum 1881 Schoolhouse, as measured by a multiple choice objective test.

Control Group - Grade 3 classes scheduled to attend the Edmonton Public Schools Archives and Museum 1881 Schoolhouse on Tuesday or Thursday mornings during March and April, 1988 and tested following exposure to the program without the provision of reproduction costumes.

Costume Component - that portion of the educational program carried out at the Edmonton Public Schools Archives and Museum 1881 Schoolhouse which deals with clothing worn by students attending Edmonton's first public school from 1881 to 1888.

Demographic Information - the age, sex and school of Grade 3 students attending the Edmonton Public Schools Archives and Museum 1881 Schoolhouse.

Edmonton Public Schools Archives and Museum 1881 Schoolhouse - "the first public school established in the Alberta district of the Northwest Territories" (Brochure - Appendix C), restored to its original condition and used for educational programs.

Education - the act of "imparting information, knowledge, interpretations, etc. concerning existing phenomena and events that have occurred" (Hansen, 1984, p. 179).

Educational Program - activities planned for use at the Edmonton Public Schools Archives and Museum 1881 Schoolhouse intended to enhance students' experiences at the site.

Experimental Group - Grade 3 classes scheduled to attend the Edmonton Public Schools Archives and Museum 1881 Schoolhouse on Tuesday or Thursday mornings during March and April, 1988 and tested following their exposure to the program with the provision of reproduction costumes.

Inappropriate Costume Detail - any characteristic (objective or subjective) which fails to accurately define clothing styles which could have been worn by students in an Edmonton schoolhouse during the period from 1881 to 1888.

Learning - "any measurable change taking place within the visitor which can be directly attributable to the exhibit experience. These changes could include the acquisition of new knowledge, concepts, perceptual skills or attitudes" (Lakota, 1976, p.249).

Long-term Recall - students' ability to note features of a program when presented with an open-ended essay question two weeks following their exposure to the program.

Museum - "any permanent institution which conserves and displays, for purposes of study, education and enjoyment, collections of objects of cultural or scientific significance" (International Council of Museums, 1969, p.1).

Museum Evaluation - "systematic assessment of the value (worth) of a display, exhibit, gallery, film, brochure, or tour with respect to some educational goal for the purpose of making decisions (continue it, redo it, stop it, throw it out, avoid it in the future, etc.)" (Screven, 1976, p.273).

Noncostume Component - that portion of the educational program carried out in the Edmonton Public Schools Archives and Museum 1881 Schoolhouse, which deals with program objectives specified by the Bennett Environmental Education Centre and is not related to clothing.

Previsit Group - a random selection of Grade 3 classes scheduled to attend the Edmonton Public Schools Archives and Museum 1881 Schoolhouse on Monday, Wednesday or Friday during March and April, 1988 and tested prior to their exposure to the program.

Program Evaluation - An assessment of a program's worth based on a set of defined standards of criteria through information obtained from visitors by testing, interviewing or observing (Shettel & Munley, 1986).

Reproduction Costume - a garment sewn to resemble a historic item of clothing in cut, detailing and fabric type, based on patterns drafted from original garments, original patterns, patterns drafted from period cutting guides or patterns drafted from pattern blocks.

CHAPTER 2 - REVIEW OF THE LITERATURE

The literature review is subdivided into four sections which relate to an evaluation of student response to wearing historic reproduction costumes in a museum setting. The first section deals with program evaluation in general and, more specifically, with museum evaluation. The second section examines educational programming carried out in museums and the third section covers literature on children's learning through direct, concrete experiences. The fourth section looks at the use of reproduction or replication artifacts in museum programming.

2.1. Museum Evaluation

In recent years, museum personnel have acknowledged their responsibility for educating the visiting public and evaluating the effectiveness of educational endeavours (Chambers, 1984; Graburn, 1977; Griggs, 1981; Herbert, 1982b; Pitman-Gelles, 1981; Shettel, in Hicks (Ed.), 1986). Shettel and Munley (1986) stated that "with the critical assumption that museums should have an educational impact on the casual visitor, evaluation becomes, in principle, a necessary and integral part of the exhibit and educational development process" (p. 63).

Museum evaluation developed as a means to assess exhibits and programs based on information obtained from the visiting public. This evaluation can be used to revise existing exhibits and programs or to help plan future exhibits (Screven, 1976; Shettel, 1973). Evaluations, however, should only concern programs which were previously thought to be acceptable (Miles in Hicks (Ed.), 1986; Yalow, Strossen, Jennings $ Linn, 1980)

Evaluation must deal with issues relating to the needs of those who will use it (Linn, 1976; Loomis, 1973). Lawrence and Cook (1982) referred to these individuals as the "stakeholders" for a program. These include "legislative committees, funding agencies, program administrators, program staff, and program clients" (p. 327). Evaluation measures should also consider the audience for whom the program or exhibit was designed. This could refer to the general public or a specialized group, such as an organized school group (Linn, 1976). Evaluators may, for this reason, choose to focus on or exclude a specific group based on conditions of the evaluation.

Decisions on the effectiveness of an exhibit are reliant on a judgment, positive or negative. Ahmann and Glock (1981) indicated that the judgmental conclusions of program evaluation distinguish it from simple educational measurement. Stufflebeam (1974) noted that "the goal of evaluation is always the same - to judge" (p. 99). To reduce bias, evaluation is best performed by individuals who have a basic knowledge of exhibit or program goals and objectives, but do not have a close emotional commitment to the success of the program (Raizen & Rossi, 1981).

Program evaluation may be categorized as formal or informal. Informal evaluation emphasizes "casual observation, implicit goals, intuitive norms and subjective judgement" (Stake, 1967, p. 523), causing evaluator bias to be a potential problem. Draper (1977) indicated that, when performing an informal evaluation, the evaluator should not speculate on visitor motivation based on casual observation. Formal evaluation is less dependent on subjective judgment and intuitive thought. It utilizes structured evaluation procedures and, in this way, characterizes Kerlinger's notion of science as opposed to common sense (Kerlinger, 1986). Kerlinger distinguished science from common sense according to five features: science oriented research utilizes a theoretical framework which has been tested; hypotheses are tested systematically by attending to all available data; extraneous variables are controlled; relationships are systematically tested and explanations for relationships are only presented if they can be tested. The resulting evaluation is, in this way, more objective and reliable as a measure of exhibit or program effectiveness.

Pretests, which evaluate visitors' knowledge before being exposed to a program, may be compared to posttests to obtain a quantitative measure of program impact (Screven, 1976). It has been suggested that every subject be presented with a pretest and a posttest to insure the equivalence of control and experimental groups prior to testing (Eason & Linn, 1976; Yalow et al., 1980). A condition arising from this research design, however, is the tendency for a pretest to sensitize the visitors to what they should attend to (Alt,

1980; Screven, 1974, 1976; Yalow et al., 1980). Screven (1974, 1976) suggested that it is best to give pretests and posttests to different groups of museum visitors and through the use of a large sample and random selection, variation between control and experimental groups could be minimized. A study by Prince (1982) measured the base level of visitors' cognition by asking them which questions they would not have been able to answer before having seen the museum exhibit. This research technique had the problem of being overly dependent on the visitors' honesty and ability to correctly identify questions which they could not have answered. Extraneous variables also need to be controlled in order to clearly identify the independent variables. Complete control over all variables is not possible, making it necessary for the evaluator to control the extraneous variables which are seen as being most critical and have the greatest effect on the trait being measured (Yalow et al., 1980).

Evaluation can either be formative, which is used to assess a program prior to its completion or summative, which is executed on completion of a program. Feedback from formative evaluation is received early so modifications can be made to the original design (Ahmann & Glock, 1981). Questions can deal with "content, validity, vocabulary level, usability, appropriateness of media, durability of materials, efficiency and other matters" (Popham, 1974, p. 100). Summative evaluation is used to evaluate whether the finished program is effective and shows how it relates to other educational alternatives (Griggs, 1981; Popham, 1974; Screven, 1976). Necessary revisions can be incorporated into the program or exhibit if they are

minor and not costly and information can be used to plan future programs.

Formative and summative evaluation procedures can be either goal-referenced or goal-free. A goal-attainment model of evaluation is planned with instructional goals specified prior to the program development, the program is based on these goals and evaluation is conducted to assess achievement of the goals (Ahmann & Glock, 1981; Shettel, 1973). Brinkerhoff et al. (1983) indicated that an evaluator should be aware not only of the program goals, but also the individuals involved, activities, resources, time-line and the larger organization which influences the program.

It is essential that the goals be measurable learning or performance outcomes (Screven, 1976). Otto (1979) noted that these goals should be concrete and realistic rather than abstract ideals which may not be possible. Stake (1967) and Linn (1976) suggested that an evaluator should examine all possible outcomes, both desirable and undesirable, and that the goals of others, including students, be looked at. Evaluation, according to Draper (1977) and Stake (1967), should be based on goals specified by the educator and not by the evaluator. The evaluator's role is to interpret these goals, record them as behavioural objectives and question the educator to determine if they accurately describe the program intent (Otto, 1979; Stake, 1967).

Stake (1967) noted that intents can be compared to observed conditions in terms of antecedents (conditions prior to the education experience), transactions (conditions making up the education

experience) and outcomes (conditions following the education experience). The term "congruence" is used to express the relationship between intents and observed results while "contingency" identifies the relationship between antecedents, transactions and outcomes. Relationships between intended conditions are labelled as being logical, while relationships between observed conditions are empirical.

Goal-free evaluation, identified by Otto (1979) as naturalistic evaluation, differs from goal-referenced evaluation since it is not based on a formalized statement of the goal but examines all effects of a program (Ahmann & Glock, 1981). Ahmann and Glock suggested that this best serves as a supplement and not an alternative to goal-referenced evaluation. Stake (1967) noted that this type of evaluation should be based on "the philosophic background and basic purposes of the programme" (Stake, 1967, p. 532).

Program evaluation can examine intrinsic or extrinsic criteria (Ahmann & Glock, 1981). The former stresses the events comprising a learning situation and was identified by Stake (1976) as "process" evaluation. The later focuses on the outcome of a program and was identified as "product" evaluation by Stake.

Techniques for gathering data may include formal interviews or written questionnaires, open-ended discussion, unobtrusive observation and various other indirect measures. Linn (1976) noted that the method of evaluation selected should be in the same mode as the learning experience. An informal museum visit tends to relate more closely to the interview than the questionnaire. Anderson

(1968) noted that interviews also allow questions to be clarified. Limitations of time, however, often necessitate the choice of a written questionnaire over an interview schedule (Kerlinger, 1986).

Questions for interviews and questionnaires can be divided into fixed alternatives and open-ended response formats. Museum evaluations have tended to emphasize the fixed alternatives, in which possible responses are presented, so a visitor need only choose between them. Scale items, on which visitors record the degree that they hold a specific belief, are commonly used to assess attitude in museum evaluation. These measures provide standard responses which facilitate coding and reduce the effects of evaluator bias (Kerlinger, 1986). Open-ended items allow the visitor to respond freely since they do not have a limited number of specified responses. Kerlinger noted that this type of evaluation is flexible, better adapted to determining attitudes and has the capability to determine unexpected results. The time needed to complete a questionnaire, however, should not excessive (Eason & Linn, 1976; Linn, 1976)

Unobtrusive observation examines visitor behaviour in a museum setting. The path they take, the exhibits they see, the exhibits they miss, the time they spend at various exhibits and the people they talk to, can all be observed and recorded. Nielsen (1946) indicated that "the only method that can be employed to determine how museum visitors react is to observe the reactions of the visitor himself, in the context of specific museum situations which may or may not be common to many museums" (p. 103). This evaluation

technique has the advantage of observing the natural behaviour of a museum visitor (Sheppard, 1960). A limitation of this method is that it cannot measure visitor attitude, interest, or knowledge (Linn, 1976; Sheppard, 1960). Cone and Kendall (1978), however, found that a high correlation exists between the time spent viewing an exhibit and visitors' ability to recall it when asked what they remembered about their visit. Ideal research efforts, involving unobtrusive observation, would use it in conjunction with an interview to ascertain the motives for visitors' actions (Sheppard, 1960).

Many museum evaluations tend to look at visitors' immediate responses to an exhibit or program and are carried out shortly after a learning experience. This could lead to the conclusion that an exhibit is ineffective when, in fact, it has had an impact on visitors' awareness and attitudes to the material being presented. Measures of long-term impact are needed to assess program or exhibit effectiveness (Screven, 1977). Yalow et al. (1980) suggested that an effective test of a museum's impact on visitors would involve an interview conducted at a later date. One problem of long-term research identified by Gross and Pizzini (1979) is the effect of maturation. To assess the long-term effect of a museum experience, Borun (1977) sent questionnaires to teachers, asking them to indicate what effect the museum visit had on students' attitudes. One limitation of this evaluation procedure, recognized by Borun, was teacher bias.

Deciding on an effective evaluation technique tends to be a difficult process due to the weakness of various evaluation methods

and limited resources, necessitating the choice of some methods over others (Reichardt & Cook, 1980). Nielsen and Turner (1983) indicated that evaluation methods change depending on the question an evaluator wishes to address and that the evaluator should be conscious of "matching evaluation methods to specific questions, having multiple methods from which to choose and emphasizing how information will be used" (p. 398). In effect, the goal is to find a method which is best suited to evaluate a given program under a specified set of conditions.

2.2. Educational Programming in Museums

Educational programming has been identified as an important function of museums (Commission on Museums for a New Century, 1984; Pitman-Gelles, 1981; Winstanley, 1967). This implies that museums have an educational role which goes beyond the visual display of objects, a role which aims to enhance visitor learning and enthusiasm for the topic.

Museums have been examined in terms of the characteristics distinguishing them from other educational media. Original artifacts housed within the museum tend to be the primary feature stressed in the literature. Winstanley (1967), in his comparison of a museum to a library, said that both present the user with information but while libraries rely on written materials, museums educate through the use of concrete objects. Fairley (1977) and Pitman-Gelles (1981)

indicated that museums have an advantage over textbook learning due to the existence of concrete objects which are not affected by personal bias in secondary sources. The one feature reducing the historical accuracy of involvement with items in a museum is that they have been "removed from their social context and placed in a museum" (Hansen, 1984, p. 178). This implies that interpretation is necessary to make the object more meaningful in terms of its social or ecological contexts (Chapman, 1982; Harrison, 1967; Richardson, 1968; Sterling, 1976).

A person's ability to attribute meaning to an artifact is reliant not only on understanding, but also on the museum visitor's perception (Whittlin, 1968). To understand an object, the visitors must be able to relate it to something with which they are already familiar (Screven, 1976). Matthai and Deaver (1976) noted that young children are unable to think in terms of abstract concepts and may attend only to the concrete elements of a display. Chapman (1982) indicated that effective educational programs could be planned by showing people how the information relates to them personally, grouping separate facts into one identifiable category supported by concrete examples, selecting realistic goals and considering educational programs when an exhibit is being planned.

Program planning within the museum recognizes two primary learning domains. These include the cognitive ("acquisition of new knowledge, concepts") and the affective ("perceptual skills or attitudes") (Lakota, 1976, p. 249). Pitman-Gelles (1981) and the Royal Ontario Museum (ROM) (1979) indicated that a museum experience

should be enjoyable, teach concepts about the world, help learners to develop an understanding from objects and aid them in acquiring the skills needed to learn from museums in the future. Fairley (1977), Hicks (1986) and Sterling (1976) stressed the affective domain in museum education. A review of the literature, however, reveals that the two learning domains are related and that one cannot be examined through exclusion of the other (Screven in Hicks (Ed.), 1976). Wolsk (1975) stated that "until the pupil has achieved a certain level of understanding, the whole subject is too remote and confusing to be of real interest; in the absence of real interest, what is learned will be too superficial to be effective in forming or changing attitudes" (p. 8).

Much literature on the museum's role of enhancing visitor enthusiasm is directed toward the study of youth-oriented museums. Heine (1979) stated that the objective of the youth museum is "to prod the visitor to take note, to kindle interest, to waken curiosity, to create the desire to read, to challenge the visitor to want to know more" (p. 25). Koran and Baker (1978) and Parr (1967) have indicated that learning resulting from a field trip does not exceed classroom learning. The interest generated by a museum outing, however, could justify the field trip experience.

Szpakowski (1973) indicated that the museum should enhance the school curriculum and that schools and museums should become more knowledgeable of the other's role. Museums should know the school curriculum and the subjects taught at various levels so programs can be designed in terms of this curriculum, the museum's collection and

the museum's interest. Teachers should become familiar with museum tours and programs so these may be incorporated into unit plans and not be used as a "treat" (Fairley, 1977; Lacey & Agar, 1980; Newsom, 1978; Ripley, 1968).

Zeller (1985) stated that the museum should always be treated as a unique learning opportunity. He noted that, for children to regard the museum experience as being separate from classroom learning, "fun, purposeful play, challenging new experiences, being with friends, self - directed exploration and discovery and spontaneity must be major parts of museum learning" (p. 7). Museums, said Zeller, don't enrich classroom learning, but facilitate in "laying foundations for lifelong learning" (p. 9). Newsom (1978) agreed that the relaxed museum atmosphere is essential.

2.3 Experiential Learning Theory

Concrete experiences have, for many years, been examined in terms of their educational potential. Many theorists have advocated the use of practical experience as an effective means to educate children (Blyth, 1984; Boyd, 1963; Dewey, 1938). In recent years, with the increased concern regarding the educational role of museums, planned experiences have also been incorporated into museum and historic site programs. The traditional "look but don't touch" philosophy has been seriously questioned by museum educators, particularly in terms of its effect on children's learning and enthusiasm.

Experiential learning theory refers to the use of concrete experiences to encourage a meaningful education, an education in which facts are not simply memorized, but are learned through active discovery and understood (Blyth, 1984; Eason & Linn, 1976). Blyth noted four possible definitions for the term "experience". The first of these refers to a specific event which actively involves the individual. The second definition sees experience as all events which make up a person's life. Experience can be used to indicate some degree of competence at a specific task and finally, it can be used in philosophy or psychology to describe the concept and act of experiencing. Blyth placed emphasis on the meaning given in the second definition.

Dewey (1938) and Blyth (1984) both identified two aspects of experience. Blyth referred to these as the subjective and objective portions while Dewey identified them as the experiences within a person and the active side of experience. The objective portion (active side) is the actual thing or event being experienced. The subjective portion of an experience (within a person) is the process of experiencing. This is dependent on people's beliefs and attitudes, causing it to differ from person to person, based on their past set of experiences. Dewey noted that an experience can only exist as an interaction between these two aspects. Each experience which an individual has, affects his perception, causing future experiences to be unique (Jensen, 1982; Marcouse, 1974; Shuh, 1982; Winstanley, 1967). Ausubel's theory of subsumption is related to this idea. An individual has an existing concept in his cognitive

structure to which new information is added. The result is that new information is fit into the cognitive structure in such a way that both the information and the concept are altered (Novak, 1976).

Piaget's theory of cognitive development follows a similar line of thought. Individual learning, according to Piaget, is dependent on what the person does in his or her environment. A child manipulates a stimuli, attends to the results of his or her actions and, through this process, a learned structure or "schema" is developed. When an individual is subject to a new stimulus that does not fit into the previously formed schema, he or she must adapt the existing schema, or form a new one through the process regarded by Piaget as "accommodation". If the stimuli is familiar, however, the individual can fit it into the previously formed schema through "assimilation". When people are in a state of calmness and stability, Piaget says they are at "equilibrium". Any disturbance to this state causes people to act in ways which will re-establish their equilibrium. This continual process of cognitive dissonance followed by a new equilibrium implies that the person is continually growing both intellectually and emotionally (Good & Brophy, 1977).

Piaget's theory of adaptation through the processes of accommodation and assimilation implies that, for learning to occur, an individual must be presented with moderately unfamiliar experiences. If the activity or setting is greatly dissimilar from the individual's past set of experiences, he or she will be placed in a situation of stress where no learning can occur. If, on the other hand, the experience is too familiar, very little accommodation to

the cognitive schema is needed, and thus, little or no learning takes place (Anderson, 1968; Chickering, 1977; Dewey, 1938; Marcouse, 1974).

Numerous theories recognize that an experience must be at the student's level both intellectually and emotionally. Instruction should start with things that are familiar to the learner before dealing more foreign ideas and should begin with the manipulation of concrete objects before covering abstract principles. Bruner suggested that learning should occur through the use of a spiral curriculum in which a topic is covered repeatedly at increasing levels of abstraction (Good & Brophy, 1977). Dale's cone of experience is often used to identify the various levels of experience arranged hierarchically in order of abstraction. At the base of the cone are direct experiences which rely on actual involvement with the object or phenomenon being illustrated. The experiences gradually become more abstract as they are listed toward the peak (Dale, 1969; Smith & Nagel, 1969).

A great deal of literature supports the use of multisensory experiences to promote learning. The Schools Council (1974) indicated that verbal messages alone are not sufficient to promote meaningful learning but that children require tactile stimulation as well. Shettel (1973) and Smith and Nagel (1969) agreed, indicating that not only do multisensory experiences increase understanding, but contribute to permanency of learning as well. In effect, when an individual is actively involved in an educational experience which

stimulates all of his senses, the learning which results is more likely to have a long-lasting effect.

Piaget's theory of developmental stages implies that young children should be presented with multisensory experiences to facilitate learning (Cole, 1984; Matthai & Deaver, 1976). In the sensory motor stage (0-18 months) infants are almost entirely dependent on sensory involvement to facilitate development and learning. During the preoperational period (18 months - 7 years), children learn through active manipulation and are able to relate situations to previously developed schemas. The children tend to be fairly egocentric, causing them to see an object or event only in terms of how it relates to themselves. The concrete operations phase (7 years - 12 years) is characterized by an ability to classify objects mentally without relying on active manipulation. Children still require concrete experiences to assist them with the development of mental reasoning, however (Machlis & McDonough, 1978). From age 12 on, children are in the formal operations stage when they no longer need concrete experiences to reason about more abstract concepts (Good & Brophy, 1977).

Experiences should be planned so they relate to the object or phenomenon being presented (Shettel, 1973). The role of an instructor is often seen by experiential learning theorists as a guidance figure to help students experience a phenomenon, form discoveries and develop more abstract principles. Children attend to information which is meaningful to them and, through questioning and

direction, can be encouraged to learn more (Korzinik, 1984; Marcouse, 1974).

A problem which has been identified in relation to experiential learning is the limited availability of experiences (Smith & Nagel, 1969). Sensory experiences, according to Buchmann and Schwille (1983), are limited by the length of one's life, social status and place of residence. They also stated that information from sensory experiences may lead the person to form incorrect conclusions. These limitations, however, could be minimized with planned activities.

Research has shown that children tend to enjoy participatory activities in museums. Harvey (1951) found that students who were involved in a first-hand experience had a greater enthusiasm toward science than students who received classroom instruction. Studies by Gillies and Wilson (1982) and Koran (1984) showed that children tend to be more receptive to participatory exhibits than adults, possibly due to their past learning through active discovery. Consequently, activity based programs could make the child feel more comfortable in a museum setting which may have otherwise been seen as an "unfamiliar, awe inspiring, even frightening place full of strange things, many of which he [the child] will neither recognize nor understand" (Winstanley, 1967, p. 18).

2.4 Replications in Museum Programming

The museum's aim is to present "real" objects in such a way that meaning can be derived from them. At times, however, a replication is needed to insure that the actual artifact is not damaged.

Booth, Krockover and Woods (1982) recognized that touching is important to "break down the barriers" of a static exhibit. They suggested that opportunities be incorporated into the museum setting, allowing visitors to touch. Examples presented by Booth et al. include a sample of marble placed next to a statue or a swatch of fur placed next to a polar bear. These samples are identified as "touchables", being expendable and easily purchased or reproduced. Fairley (1977), Olofsson (1979), Pohle (1979) and United Nations Educational, Scientific and Cultural Organization (UNESCO) (1958) indicated that fragile irreplaceable objects should never be handled but used for display and study purposes only. Within the science museum, "touchables" are easily incorporated since many of the discovery teaching materials can be purchased. History oriented museums, however, collect and display items which are no longer available on the commercial market. Consequently, replications are often required (Matthai & Deaver, 1976).

UNESCO (1958) indicated that art replicas must be authentic if they are to encourage a meaningful understanding of the original artifact. Replicas which fail to accurately represent the original causes "the pupil's taste [to be] perverted rather than improved" (p. 35). Blackstock (1982) and Booth, Krockover and Woods (1982) noted

that when replication costumes are used, they must be authentic in style and fabric type so the period is accurately portrayed and the educational value is maximized.

A review of the literature discloses the belief that an authentic replication could present students with an experience representing the time when the original was first used (Cole, 1985; Fairley, 1977). Fairley and Cole indicated that replications produced from new fabrics could represent the condition of an original artifact when it was new more closely than the worn and faded original. An original could, for this reason, produce an inappropriate image of life, as it would have been in the past. In addition, the limited availability of authentic artifacts, stated Cole (1985), would present an incomplete and distorted image of life from the past. Rathje (1979) noted, in reference to this issue, "it sometimes seems that the more abundant and persistent an item is during its period of use, the fewer examples are intentionally preserved" (p. 11).

Replication clothing may be worn by interpreters or participants of an educational program. Booth, Krockover and Woods (1982) indicated that costumes worn by docents give them confidence and a personality appropriate to the time they are representing. Costumed docents are also more easily identified and help create a mood indicative of another time and place. Wells (1988) studied the effect of costumed interpreters on the cognitive and affective responses of children participating in the program at the Victoria Settlement. She determined that students who observed an interpreter wearing a reproduction costume received higher scores for abstract

objective test items than students who observed an interpreter wearing a uniform. Lower scores were obtained for concrete visual recall items. Wells indicated that a costumed interpreter attracts students' interest, causing them to attend more to abstract concepts and less to competing visual stimuli. Students' affective response to the costume and noncostume components of the program were more favourable for students who observed the costumed interpreter. Razzoline (1982) discussed costuming intended for the Fortress of Louisbourg National Heritage Park. Costumes planned for this site were to reflect not only the time period being portrayed, but also the various social classes represented to create a total visual image and atmosphere representative of that time and place. Blackstock (1982) described the costuming by Parks Canada for interpreters of historic sites. She noted that "regardless of the individual items, the effect created when an interpreter wears the complete costume creates the lasting impression" (p. 15). Booth et al. (1982) stated that the one negative feature possible when only interpreters dress in costume is that a "barrier" between the interpreter and visitors could result.

Costumes intended for the program participants have been created to provide them with the experience of wearing costumes. Young children have been the focal group for this type of program. Madden (1982) stated that a popular activity at the National Museum of Natural History discovery room allowed children to try on costumes from foreign countries. He said "they twist and turn to see themselves dressed in foreign clothing and compare their outfits with

those in the life-size photographs of children of Africa, Asia and South America" (p. 8). The Dochester and Essex Museum presents a costume lecture to children ages eight to twelve and children dress in historic costume to illustrate the periods discussed (Fairley, 1977). The Geffrye Museum uses reproduction costumes to outfit two members of the visiting group to illustrate various costume styles (Fairley, 1977). In the Boston Children's Museum Center Street Project, children try on costumes and take the roles of various business persons in a replica of the Center Street. Reproduction costumes used at the Derby museum are intended to enhance students' experiences in a medieval historical setting. Not only do students get dressed in costume, they also enact an activity characteristic of the time, such as preparing and eating a "green stew", while medieval music plays in the background. The goal of this experience, stressing the affective domain, is to create a vicarious experience through dramatization, enabling children to form a clearer image of the past (Fairley, 1977). Harrison (1967) indicated that allowing children to dress in reproduction costumes provides them with a concrete experience which can easily be perceived and understood by the child.

Reproductions, according to Cole (1985), should be distinguished from original artifacts. Failure to do this would be an act of deception to the visiting public. Cole stated that an interpreter should have an adequate knowledge of the purpose for using reproductions and the process to produce them so this information can be conveyed to visitors. Winstanley (1967) suggested that older

children be told why replicas are used. He said that younger children, however, could see the replica as being "fake", causing them to loose interest.

Replicas, it has been said, do not evoke the same excitement as an original. Schools Council (1972) stated that

> children respond to "real" objects in a way they do not respond to other things, the real thing means something very special to the child. But what is a "real" object, using the word "real" in the same way as a child uses it, which is hard to define? It seems to mean something authentic, not a copy; an original thing made for a purpose and used for that purpose. (p. 31)

Proctor (1973) supported this belief. Pohle (1979) noted that children's museums collect authentic objects to foster a child's perception of and appreciation for the "real" thing. This implies that replicas should not replace the use of original artifacts entirely, but serve as an adjunct to educational programming when tactile exposure to an object is desired but not possible due to its fragile nature.

CHAPTER 3 - METHODOLOGY

This chapter includes the theoretical framework, description of the educational program, description of reproduction costuming, sample selection, sampling procedure and a description of the test instruments. The test instruments are subdivided into student background and demographic measures, cognitive and affective tests and a measure of long-term program impact. The section concludes with a discussion of the statistical analysis used to interpret the data.

3.1 Theoretical Framework

This research project stresses children's active involvement in the learning process. As such, it draws from both experiential learning theory and evaluation research. This study utilized the model of Dale's cone of experience in combination with the goal-referenced approach to evaluation given by Screven (1976). Dale's cone of experience (Dale, 1969) is based on the premise that individuals learn through presentations with varying levels of abstraction. The base of learning, according to this model, should rely on direct purposeful experiences, on activities which stimulate the learner's senses and form a strong base for future learning.

Moving up the theoretical cone of experience represents the use of more abstract levels of experience. Activities at the peak of Dale's cone are furthest removed from the actual concept which they seek to represent. Though activities may be planned from the lower to higher levels of abstraction, this is not essential for all learning events. In fact, learning may move back and forth from one level of experience to another depending on the needs of the learner and on the specific nature of the learning experience. Learners may also experience a situation through various levels of abstraction simultaneously. Students, according to this model, are presented with meaningful experiences which contribute to the learning process and provide a rich base for future learning experiences (see Appendix A).

The model of museum evaluation utilized for this study is the goal-referenced approach proposed by Screven (1976). He discusses this evaluation technique in terms of museum exhibits. It can, however, be used to evaluate educational programs. The first stage is to write goals and objectives of the program to be evaluated. Formative or summative evaluations are then conducted to determine if the specified objectives were met. The degree to which a program meets these objectives determines its success or failure.

3.2 Description of the Educational Program

Bookings for classes to attend the 1881 schoolhouse are made through the Bennett Environmental Education Centre. Burt Demeriez, program coordinator, indicated that schools could learn of the educational program through student oriented pamphlets entitled Looking Back which were sent to schools in 1982 to commemorate the 100th anniversary of Edmonton public schools. They could also learn of Edmonton public schools through the book Looking Back by Mike Kostek (1982) (B. Demeriez, personal communication, 1987). Immediately following their scheduled booking to attend the 1881 schoolhouse, schools are sent a handout, prepared by the Bennett Environmental Education Centre, which describes educational programming conducted at the site (see Appendix B). This handout presents the purpose of the 1881 schoolhouse educational program and informs teachers of interpreters who could be instructing on the day of their visit. It also shows procedures for the field trip and outlines activities within the half-day program.

The educational program conducted at the 1881 schoolhouse follows guidelines specified in the handout sent to schools. Teachers are responsible for organizing their classes and arranging transportation to the 1881 schoolhouse on the date of the field trip. Students arrive at the school as a group and are met by an interpreter who rings a school bell at the 1881 schoolhouse entrance. Students line up outside the schoolhouse and the interpreter gives them a brief introduction to the program. The children then file into the

one-room schoolhouse and sit in the desks. The program activities take the form of a school day representing the early 1880's. Topics covered during the half-day session include discipline, patriotism, morality, traditional materials (slates), traditional subjects and class activities (number work, penmanship, reading, health inspection, spelling bee), recess activities and a history of the 1881 schoolhouse. The program concludes with the taking of a class photograph.

The information sheet sent by the Bennett Environmental Education Centre indicates that teachers have the option of suggesting that students come in costume. Given this suggestion, students may or may not dress in costume due to selective choice, forgetting or lack of resources. The type of costume worn could also vary. Regular clothing could be adapted to resemble 1880's clothing styles (e.g., rolling up pant legs); clothing of someone else could be worn due to its similarity to older styles; or clothing could have been specially made for that or for another historic oriented occasion. The authenticity of student prepared costumes could vary greatly, depending on the style and fabrics used. This would affect the feeling that students derive from their dress and the visual effect created by other students dressed in costume (see Appendix C for a description of the agency).

3.3 Description of Reproduction Costuming

During the time from April 1987 to December 1987, reproduction children's clothing was produced for use in the Edmonton 1881 Schoolhouse. The goal of the reproduction costuming project was to produce a set of authentic reproduction costumes, including both outerclothing and underclothing, to outfit entire Grade 3 classes that attend the Edmonton 1881 Schoolhouse. The number of costumes to be produced was set at 15 girls' costumes and 15 boys' costumes. To create the full impact of students trying on and wearing a garment representative of the 1880's time period, a decision was made to include only natural materials (cotton, wool, silk, linen); notions which would have been used during the 1880's, given limitations of availability (e.g., mother of pearl buttons); and authentic construction techniques (e.g., straight stitch seams, hand over cast seams, handworked buttonholes). The goal was not to create a set of authentic costumes which resembled each other but to create an authentic set of costumes to be used in a classroom setting. This implied that the costumes would require the variation in style, sizing and fabric representative of a class in the 1880's.

The first stage in costume production was to conduct research on clothing styles worn by children, during the 1880's, to an Edmonton one-room schoolhouse. School photographs of the 1881 schoolhouse from 1882 and 1888 (see Appendix D) served as a valuable reference for styles which would have been worn by Edmonton school children during this era. Other sources which were consulted

included historic photographs, periodicals from the time period, biographic information, drafting manuals, authentic patterns, historic garments and secondary source literature. Due to the limited resources in Edmonton, research in other museums and archives across Canada was necessary. Archival photographs, showing children from this era, were photocopied and photographic reproductions or slides were made of those which related most closely to the costuming project. Garments were examined in terms of style line, fabric type and construction details. This information was recorded on a research form prepared earlier (see Appendix E). Colour slides were taken of each garment observed. Inside construction details were also photographed for future reference. Patterns were taken from garments which could be used or modified for use in the costuming of school children.

The second stage in the production of reproduction costumes was to examine the sources collected and to decide on the styles which would be used. Patterns were copied from patterns put out by 1880's companies or scaled up from patterns illustrated in 1880's periodicals. Patterns were also drafted for garments which were evident in photographs or periodicals but for which no original garment or pattern was found. Muslin prototypes were sewn for each style type and these were fitted to Grade 3 students. Funding through Job Creation made available three Summer Employment - Experience Development (SE-ED) positions to work on this phase of the costuming project.

The next phase in costume production involved the selection of fabric and notions. Most of the fabric was purchased through retail sources since one type of fabric was often intended for only one or two garments. Wholesale dealers were used to purchase bulk fabric such as white cotton for under clothing. Notions were also selected for their authenticity. Yarn was purchased for knitted and crocheted collars, edgings and knitted stockings. Cotton stockings were also purchased from a retail store. Though intended for exercise wear, the stockings greatly resembled those seen in photographs from the 1880's. Footwear was made from skates which had the blades removed and were dyed black or dark brown.

The final stage of costume production which was conducted concurrently with the purchase of fabric and notions involved the actual sewing of garments. Funding through Job Creation enabled the employment of five Section 38 Manpower Grant positions. These individuals sewed the garments using historic methods of construction wnich had been observed during the research phase (see Appendixes F for an outline of costume production, G for line drawn illustrations of the reproduction costumes and H for a photograph of students dressed in reproduction costumes, sitting in front of the 1881 schoolhouse).

3.4 Committee Approval

Following production of reproduction costumes, a research proposal was designed and approved. A University of Alberta ethics review committee considered the proposal, suggested some revisions and approved the research project. The Edmonton Schools Cooperative Activities Program was then consulted through Field Services, Education Faculty, University of Alberta. All research conducted in Edmonton schools requires this consent.

3.5 Pilot Test

Prior to conducting the actual research for this study, the researcher implemented a pilot test to determine if the questions proposed for the evaluation were appropriate to a student in Grade 3. Six students from a Grade 3 class who had visited the 1881 schoolhouse were presented with the questionnaire. After completing the questionnaire, students were asked to say what they thought each question meant and to indicate items which they found confusing. Wording of questions was changed based on students' comments. The question which asked students to circle everything that could be found in the 1881 schoolhouse was added to help insure that the questionnaire was a valid measure of student cognitive response to the noncostume component. Items having distracters which were not

selected by students were altered by modifying the unattractive distracters.

The long-term test instrument was also given to the six pilot test subjects. In its original form, the question asked students to explain one day's activities if they were living in the 1880's. It was found that this question was too broad and required more specific prompts by the researcher before students could respond. A more direct wording was, consequently, used for the actual test instrument.

The second pilot test group used for this study was an entire Grade 3 class who had visited the 1881 schoolhouse. This class was given the written questionnaire and instructed to answer the questions and return them to the researcher. Based on findings from this pilot test, distracters were revised and a decision was made to present the questions orally. This was intended to help insure that students understood the questions and how to respond. The same form of oral presentation was used for every class in the study. Additional instructions given by the researcher included the following: On Part 1, Question 2, control and experimental groups were told the following: "I know that you have visited the 1881 schoolhouse today, but only circle yes if you have been to the school sometime before today." On Part 2, Question 10 of the cognitive and experimental group tests and Question 8 of the previsit group test, the researcher stated "none of these pictures shows the Edmonton 1881 Schoolhouse but only one picture was taken in the 1880's. Which picture?" For questions which showed the second set of girls' or

boys' clothing, the researcher stated that the four girls (boys) shown were wearing different clothes than those on the preceding page. The researcher also stressed that students could circle more than one answer for the question requesting that they circle everything which could be found in an Edmonton one-room schoolhouse from 1881. Part 3 of the questionnaire was introduced by reading the sample question and stating that if students didn't like school at all, they would circle the words "not at all". If they didn't like school much, they would circle the words "not much". If they didn't know, they would circle the words "don't know". If they sort of liked school they would circle the words "sort of" and if they liked school very much they would circle the words "very much". The first question was then read and alternative levels of agreement were stated by the researcher. Subsequent statements were read without levels of agreement.

The teacher questionnaire was pilot tested by allowing the teacher from the first pilot test class to read it and make comments. Questions were revised based on suggestions given by the teacher.

3.6 Sample Selection

The subjects for this study were chosen from Grade 3 classes that had booked tours to the Edmonton Public Schools Archives and Museum 1881 Schoolhouse during March and April 1988. Only those classes

that agreed to participate in the research project, as defined by the letters sent to them in advance, were used in this study.

The study was limited to Grade 3 students for a number of reasons. The primary reason was that it insured control over the external influence of age on student response to wearing reproduction costumes. It also helped to insure that instruction held in conjunction with the field trip was less diversified between visiting classes. The social studies curriculum for Grade 3 classes notes that students will "inquire into issues related to community life during the times of early settlers" (Alberta Education, 1981, p. 28). This focus on pioneer life, at the Grade 3 level, relates directly to the program goals and objectives for the 1881 schoolhouse set by the Bennett Environmental Education Centre (see Appendix I). Consequently, the 1881 schoolhouse program fits best into the Grade 3 curriculum. Information on past bookings through the Bennett Environmental Education Centre verified this belief, indicating that Grade 3 classes were the most predominant visiting group.

Grade 3 classes sampled in this research were limited to those under the direction of one 1881 schoolhouse instructor. This limitation was necessary to insure that interpreter style would not account for variation in students' responses. Consultation with the interpreter, prior to the study, stressed that lessons conducted for each group be kept constant. The costuming of this interpreter was kept standard during this study. Due to limits imposed by time and costuming budget, the interpreter's costume was maintained as it had

been in the existing program. His attire consisted of a black suit, bow tie, white shirt and dark shoes.

Control and experimental groups were selected from classes who attended the schoolhouse on Tuesday or Thursday morning. It was necessary to test groups that attended the 1881 schoolhouse in the morning so the evaluation questionnaire could be completed in the early afternoon on the same day. Using groups who attended the 1881 schoolhouse program in the afternoon would have necessitated waiting until the following day to submit the written questionnaire. This time lag could have been reflected in students' responses. Tuesday and Thursday mornings were chosen because the selected interpreter only taught the classes on those days.

To ascertain the base level of student affective and cognitive responses to the program, prior to their attendance, a previsit group was ted prior to their visit to the 1881 schoolhouse. This sample was randomly selected from the classes that were scheduled to attend the 1881 schoolhouse on Monday, Wednesday, and Friday.

Students who had previously visited the 1881 schoolhouse were excluded from the study. This assured that student response was dependent on the existing program and was not influenced by past exposure to the site. Students who had participated in the educational program were identified by an affirmative response to the question on the student background and demographic section of the written questionnaire, asking if they had been to the 1881 schoolhouse before.

The sample which resulted from this selection procedure was purposive, in that it used limitations to control for extraneous variables, and accidental, in that it was dependent on subjects who had booked tours to the 1881 schoolhouse. Random sampling, though ideal, was not possible for the control and experimental groups in this study since the total population was not sufficiently large. For this reason, it was necessary to test the entire population. A random sample for the previsit group was used since it was drawn from a larger population. To select the group, a number was assigned to each class. The random numbers table was then used to select the classes with corresponding numbers.

The number of groups contacted in the control and experimental groups combined equalled seven. Of these seven groups, all agreed to participate in the research project, as outlined in the introductory letter sent to principals. Following the second letter, however, one class which was assigned to the experimental group, declined full involvement in the research project. This group was excluded from the study. A second group was excluded from the sample, since they changed their booking from a Grade 2/3 class to a Grade 4/5 class. Consequently, the required limitation of grade level was no longer met by the chosen school.

The number of previsit group classes chosen for this study equalled seven. This number was chosen to equal the total number of classes selected to be in the control and experimental groups. All of the schools contacted agreed to participate in the research project. One group was excluded, however, since there was no time

when the researcher could administer the questionnaire on the day prior to the field trip.

The resulting number of classes used in this study were six previsit classes, three classes who wore reproduction costumes (experimental group) and two classes who did not (control group)

3.7 Sampling Procedure

The Bennett Environmental Education Centre was contacted at the end of February to receive the bookings for March and April, 1988. The classes which fit the criteria for this study served as the population. The test group was then subdivided into experimental and control groups by alternating the group to which each was assigned. Alternating group assignment helped insure that an equal number of classes were placed in each group and that there was at least one week between experimental groups. This time was needed to launder the undergarments and package the garments for distribution.

An attempt was made by the researcher to control extraneous variables to minimize the effect that these could have on the research design. Kerlinger (1986) stated that when random samples are not possible, the researcher should try to choose groups from the same population or use similar sample groups. Only Grade 3 classes or combined grade level classes with Grade 3 students in them were used to eliminate the effects of maturation or different curricula. When classes had students from more than one grade level, every

student not in Grade 3 was excluded from the study. Investigation was also limited to classes under the direction of one interpreter. Teachers and parents were instructed to wear their regular clothing to eliminate the effect of parent or teacher costumes on student learning. These measures were to help insure control over the most notable extraneous variables. A questionnaire, presented to teachers, helped determine the instruction used in conjunction with the field experience. This variable could not be controlled so an effort was made to identify it.

Following the division of the research sample into the three groups, control and experimental groups were each sent a letter describing the proposed study (see Appendix J), a consent form to be signed by both the principal and teacher of the cooperating school (see Appendix K) and consent forms to be signed by parents of students selected to participate in the study (see Appendix L). A random sample of seven Grade 3 classes were sent a letter and consent form requesting their participation as a previsit group (see Appendixes M and N). They were also sent parent consent forms. Approximately one week following the date when letters were sent, the researcher contacted the principals who did not return the consent forms to ask if a decision had been made regarding participation in the study.

The control and experimental groups were then sent a second letter more thoroughly outlining their role in the research project (see Appendixes O and P). Letters addressed to parents who planned to attend the program were included with the research outlines sent

to both control and experimental groups (see Appendix Q). Teachers from the experimental group were sent an instruction sheet describing how students were to get dressed (see Appendix R) and a sizing sheet to be filled in by the classroom teacher and returned to the researcher (see Appendix S). From this information, a costume was assigned to each student in the class.

Garment bags were sent to each experimental group school two days prior to their field trip. Each garment bag contained the outer garments and undergarments for one complete outfit. A laminated sheet, illustrated with line drawings for each item of clothing was included with each garment bag. The correct terminology for each piece was placed next to the representative illustration. A brief set of instructions on the back of these sheets showed students the order these garments were to be put on (see Appendix T). Students' names were written on the laminated sheets with a water soluble pen based on sizes provided by the teacher. Girls' clothing was on one garment rack and boys' clothing was on the other. Boots for each student were labelled with a small name tag tied to the lace and were hung over the top of each garment rack. A box of extra boots and extra garments labelled small, medium and large were sent to each school in the event that students were unable to fit the garments given to them. It was suggested, in the letter sent to experimental groups, that students try on costumes before their field trip date to facilitate this process. Costume racks and the extra box of boots were delivered to each school by a public schools delivery truck and

returned to the Edmonton Public Schools Archives and Museum on the day following the field trip. A letter was sent with each costume shipment to explain the items sent and to outline the procedure for returning the garments (see Appendix U).

Subjects from both the control and experimental groups dressed at their school. Students from the control group were asked to bring their costumes from home and get dressed at school. Garment bags distributed to the experimental group two days before their field trip remained in the classroom so students could get dressed at the school on the morning of their field trip. Students from both groups travelled to the 1881 schoolhouse dressed in costume (if a costume was worn), returned to their school and got changed into their regular clothing. Students from the experimental group were asked to put their complete costumes into the garment bags provided.

Evaluations were conducted at each school chosen as part of the previsit group one day before their scheduled field trip. The researcher contacted the teacher by telephone to arrange a convenient time when the questionnaire could be administered. The researcher distributed questionnaires to each student and presented the instructions orally. Each question was then read aloud to students and time was given for them to mark their answers on the questionnaire provided. This method of test presentation was used to reduce the influence of students' reading ability on test scores. It also enabled the researcher to explain each section of the test before students began that section. Questionnaires were picked up by the researcher after students had finished them.

Control and experimental group evaluations were conducted in home rooms on the field trip date, immediately following the students' lunch break. The researcher went to the classes and and a written questionnaire was administered using the same procedure used for the pretest group.

Every questionnaire was given a unique code number for identification purposes. Students in the previsit group were instructed not to write their names on the questionnaire. Control and experimental group subjects were asked to write their name on a small tag stapled to the top of their questionnaire. Each tag had the test code number written at the top. Five tags were yellow, five were blue and the remaining tags were green. These tags were torn off by the researcher and used to identify the garment number associated with each coded questionnaire. The name tags were then given to the classroom teacher with instructions to keep them for two weeks when the follow-up interviews would by conducted.

Two weeks following the field trip, the researcher presented the students with yellow name tags an oral question on school life in the 1880's. Each student was taken away from the remaining group and told that they would be given one question. The researcher also told them that they would be given a few minutes to think about the question and, when ready, their answers would be recorded on an audio cassette recorder. Those students who did not wish to answer the question, after it was presented to them, were reminded that participation was voluntary and that they did not need to answer it. In the event that a student was absent, or declined to participate in

the long-term oral test procedure, the student with the next consecutive code number was asked to participate.

3.8 Instruments

3.8.1 Previsit Group Test

The previsit group test included student background and demographic information and cognitive and affective questions selected from the control and experimental groups' test elaborated in section 3.8.2 (see Appendix V). This instrument was administered to subjects who were not used in the control or experimental groups. This previsit group test enabled the researcher to determine what students were able to do prior to instruction. The researcher chose to pretest a different group so the experimental and control groups would not be sensitized to the program, and the results would not be affected. The researcher also felt that this previsit group test would be an added imposition for classroom teachers of the control and experimental groups resulting in negative attitudes toward the research process.

3.8.2 Control and Experimental Groups' Test

The test given to control and experimental groups to measure student background and demographic information and cognitive and affective responses to both the costume and noncostume components of the program was presented as a written questionnaire divided into three sections (see Appendix W). The measure of long-term program impact was a separate question presented two weeks later (see Appendix X).

3.8.2.1 Student background and demographic measure.

A brief section at the beginning of the written questionnaire dealt with students' background and demographic information pertaining to their interests, past field trip experiences, past exposure to the 1881 schoolhouse and gender. This information was included to characterize individual participants and classroom groups according to features which could affect their response to the educational program. Questions used in this section were developed by the researcher, utilizing Borun (1977) as a reference.

3.8.2.2 Cognitive measure.

An objective test was devised as a measure of student cognitive response to the costume and noncostume components of the educational program conducted at the 1881 schoolhouse. The questions utilized were presented in a multiple choice format, in which a question (stem) was followed by possible answers and students were directed to choose the best answer. The number of distracters for each question varied according to the number of plausible answers available. In addition, more difficult questions, requiring higher levels of analysis were provided with fewer distracters, making them easier for the Grade 3 student to answer. Question 10, for which students were to select a school photograph from 1881, for example, had only three possible responses. Ahmann and Glock (1981) stated that the number of choices in a multiple choice test should vary depending on the availability of distracters and should be reduced for young children.

The level of questions testing students' cognition of the noncostume component varied. The lowest level question relied on pure recall of facts (Questions 8 and 9). These questions were eliminated from the previsit group test questionnaire since they were dependent on students remembering facts from the presentation. Question 5, 6 and 7 were reliant on recall of facts but could be answered by students who did not attend the program at the 1881 schoolhouse. For this reason, they were retained in the previsit group test. Question 1 measured students' visual recall of facts and, for this reason, was also at the knowledge level of Bloom's

taxonomy for cognitive learning (Good & Brophy, 1977, p. 591). The higher level of thought processes, in which students relate facts or concepts (comprehension), was tested in Questions 2, 3 and 4. For these questions, the student needed to relate an item to its use. Question 15 was reliant on students' ability to recall items which would have been present in the 1881 schoolhouse.

The levels of cognition tested by costume component questions also varied. Questions 11 and 13 tested the lowest level of cognitive response, being knowledge. The correct response for each question was a garment used in the program. Questions 12 and 14, however, presented students with unfamiliar garments. To choose the correct garment, students would need to form a generalization regarding the style trend of clothing worn during the 1880's. Their comprehension of 1880's clothing styles would, in this way, be assessed (Good & Brophy, 1977). Question 10 required the highest level of intellectual processing. Students needed to analyse the data from three unfamiliar photographs and choose the picture which was taken in the 1880's.

Linn (1976) indicated that evaluation should be in the same mode as the learning experience. For this reason, the noncostume component of the objective test utilized both visual and written responses. This was intended to represent the instructional mode stressed in the program. A more effective match of learning style and evaluation procedure would have involved the use of an oral interview. This, however, would have been time consuming and involved an excessive time lag between the first and last interviews

of one class, causing the results of this study to be affected. Interaction of students between successive interviews would also be difficult to control and would cause the resulting data to be affected. The written questionnaire eliminated these concerns. In addition, it was felt that, since students were requested to write on slates as part of the educational program, a written questionnaire could be used.

The costume component of the program conducted at the 1881 schoolhouse was primarily visual. For this reason, the objective test relied on pictorial illustrations to evaluate the students' learning. The multisensory experience present in the program, however, was not included in this measure.

The structure for the objective test of student cognitive response was taken from Andrews (1984), Borun (1977) and Wells (1988).

3.8.2.3 Affective measure.

A summated rating scale was devised to measure student affective response to costume and noncostume components of the educational program conducted at the 1881 schoolhouse. For each question, a statement was given regarding a student's attitude toward the costume or noncostume components of the program. Ratings given for the levels of agreement ranged from 1 (least agreement) to 5 (greatest agreement). Kerlinger (1986) indicated that a summated rating scale

includes a set of statements which contribute equally to a measure of attitude and the numbers assigned to each response can be added. The highest score possible on this measure equalled the number of questions multiplied by the highest value (5). The lowest score possible equalled the number of questions multiplied by the lowest value (1).

The affective test instrument for this study was broken down into a number of categories. Question 1 tested for enjoyment of the program in general and Questions 2 to 4 tested for the extent that subjects felt like students from 1881. Enjoyment of specific noncostume program components were covered in Questions 5 to 8 and Questions 9 to 12 tested the degree that children believed noncostume program activities contributed to their feeling like students from 1881. Questions 13 and 15 examined the enjoyment derived from wearing costume or the desire to wear a costume and Questions 14, 16 and 17 indicated if costumes helped subjects to feel like students from 1881. For analysis purposes, Questions 1, 2 and 5 through 12 constituted student affective response to the noncostume component, while Questions 3, 4 and 13 through 17 served as a measure of student affective response to the costume component.The structure for the summated rating scale of student affective response was adapted from rating scales devised by Andrews (1984), Borun (1977) and Wells (1988).

The final open-ended question was included as a measure of the program feature making the greatest impact on student affective

response. This question was not used to prove or disprove the null hypotheses but contributed to the discussion of this research.

3.8.2.4 Long-term impact measure.

An oral question was devised to measure student long-term recall of program details (see Appendix X). The researcher presented each student, individually, with a question on life in the 1880's. Students were told that they could think about the question and tell the researcher when they were ready to answer. Every response was recorded on an audio cassette recorder. These answers were then transcribed and students' ideas were divided into costume and noncostume components.

Each question was analysed in terms of the number of ideas given. These were identified as being either appropriate or inappropriate. A statement such as, "the school has a door," was given a value of one under the heading noncostume appropriate statement. Responses which presented more than one idea were given higher values. The statement that two people sit in a desk together, for instance, was given a value of two under the heading noncostume appropriate statement. This response identifies both the existence of desks in the school and the fact that two students sit in each desk. A simple response, indicating that the school would have desks, by contrast, would be given a value of one.

3.8.3 Teacher Questionnaire

A teacher interview (see Appendix Y) was devised to accomplish two goals. The first of these was directed toward the establishment of interclass equivalence prior to and following testing. Questions dealt with introductory and follow-up activities and other field trips planned by the teacher. Borun (1977) indicated that one weakness of long range testing involves the existence of intervening experiences. Information given by teachers on follow-up activities helped to determine the similarity of classroom experiences between the immediate and long-term tests.

The second goal of the teacher interview was to provide supplementary information on the discussion of long-term program impact. Questions 5, 6 and 7 were based on questions devised by Borun (1977) to assess program impact.

3.9 Statistical Analysis

The following measures of statistical analysis were used to address the null hypotheses for this research project:

Null hypotheses 1 a, b, c and d were analysed using two-tailed *t* tests to compare the mean scores obtained by control and experimental groups. The independent variable for each of these hypotheses was the provision of reproduction costumes. The dependent variable of student cognitive response to the costume and noncostume

components was measured by adding the number of correct responses given by students to questions on an objective test. Affective response to the costume and noncostume components was measured by adding the rating values which students gave for statements on a Likert scale.

Null hypotheses 1 e and 1 f were analysed by using two-tailed *t* tests to compare the number of appropriate costume and noncostume details given by the control and experimental groups. The independent variable for these hypotheses was the provision of costumes. The dependent variable was the number of appropriate costume details (null hypothesis 1e) and the number of appropriate noncostume details (null hypothesis 1f).

Null hypotheses 2, 3 and 4 were analysed by using Pearson product-moment correlation coefficients to test for relationships among the groups.

The level of significance for each statistical analysis was set at $p \leq .05$.

CHAPTER 4 - FINDINGS AND DISCUSSION

This chapter deals with findings derived from the analysis of previsit group tests, control and experimental groups' tests and long-term test data in terms of both the research objectives and the literature review. The findings and discussion are divided into five sections. These include student background and demographic findings, cognitive response, affective response, long-term impact, the relationship between cognitive and affective responses and a section which presents qualitative data. Reference is made throughout this section to the previsit group test, control and experimental group tests, teacher questionnaire and long-term impact measure (see Appendixes V, W, X and Y for the test instruments).

4.1 Student Background and Demographic Findings

The distribution of participants in this study was analysed in terms of sex, frequency of museum visits, field trips recalled, subject preference and perceived learning style. Grade level was included as an example question. Students from classes with mixed grade levels were instructed to circle their correct grade. Students from a Grade 3 class were asked to circle alternative (c) to indicate their grade level. Once data had been collected for the classes,

only those respondents from the Grade 3 level of instruction were used in the study. A second question which served to exclude subjects who did not meet the criteria for this study was Question 2 which asked students if they had been to the 1881 schoolhouse before. Only those students who circled alternative (b) for "no" were used in this study.

The number of groups used in this research were six previsit group classes tested prior to their exposure to the program, two control group classes tested following exposure to the program and three experimental group classes, dressed in costume and tested following exposure to the program. Two subjects from the previsit group and five students from the experimental group were excluded from the study due to their past exposure to the 1881 schoolhouse. All Grade 3 students from the two control group classes were first time visitors to the 1881 schoolhouse. One previsit group class, two control group classes and one experimental group class were comprised of both Grade 3 and 4 students, necessitating the exclusion of Grade 4 students from those classes. The resulting number of subjects used in this study was 80 previsit group subjects, 17 control group subjects and 44 experimental group subjects.

The sex distribution of subjects revealed that the three groups contained a proportional number of male and female subjects (see Table 1). A chi-square analysis of groups shows that no significant difference existed in terms of sex distribution (chi-square = 0.94 p = .63). The previsit group was comprised of slightly more males (51.3%) than females (48.8%). Males were also predominant in the

control group (58.8%), while the experimental group had slightly more female subjects (54.5%).

TABLE 1
Frequency and Percent Distribution of Subjects for the Sex Variable

		Sex	
Group		Male	Female
Previsit	f	41	39
	%	51.3	48.8
Control	f	10	7
	%	58.8	41.2
Experimental	f	20	24
	%	45.5	54.5

f - frequency
% - percent distribution on the group variable

The distribution of subjects in terms of the number of museums they reported to have visited showed that most subjects from the previsit group (28.2%) and experimental group (35.7%) reported to have visited two museums. Most subjects from the control group (23.5%) indicated that they visited three museums (see Table 2).

TABLE 2
Frequency and Percent Distribution of Subjects
for the Number of Museums Visited

Number of museum visits	Group					
	Previsit		Control		Experimental	
	f	%	f	%	f	%
0	4	5.1	3	17.6	4	9.5
1	14	17.9	3	17.6	9	21.4
2	22	28.2	0		15	35.7
3	11	14.1	4	23.5	3	7.1
4	8	10.3	2	11.8	0	
5	6	7.7	1	5.9	6	14.3
6	5	6.4	0		2	4.8
7	1	1.3	2	11.8	0	
8	0		0		0	
9	0		1	5.9	1	2.4
10	2	2.6	1	5.9	2	4.8
11	2	2.6	0		0	
12	0		0		0	
13	2	2.6	0		0	
14	0		0		0	
15	0		0		0	
16	0		0		0	
17	1	1.3	0		0	

f - frequency
% - percent distribution on the group variable

Student response to the question asking if they had been on other field trips showed that 97.2% of all subjects reported to have been on previous field trips. Data from the question asking which field trips students went on showed that most students from the experimental group (40.9%) listed the name of only one field trip location. The greatest proportion of students from the control group (41.2%) reported the names of two or three field trip sites and most subjects from the previsit group (35.0%) listed the names of three field trips (see Table 3).

TABLE 3
Frequency and Percent Distribution of Subjects
for the Number of Field Trips Named

		Number of field trips					
Group		0	1	2	3	4	5
Previsit	f	3	21	21	28	6	1
	%	3.8	26.3	26.3	35.0	7.5	1.3
Control	f	0	0	7	7	3	0
	%			41.2	41.2	17.6	
Experimental	f	9	18	10	5	2	0
	%	20.5	40.9	22.7	11.4	4.5	

f - frequency
% - percent distribution on the group variable

Student response to the question asking them to name field trips which they had been on showed that 77 different field trip sites were mentioned by students. These were divided into 12 subgroups. The first group labelled as "play, theatre and musical production" included such sites as Pinnochio, Stage Polaris, the symphony and the opera. Places and activities such as the Londonderry Swimming Pool, the Wave Pool, roller skating, skiing, and snow shoeing were categorized as sports oriented sites. Restaurants and food oriented outings mentioned by students were Chi-Chi's, McDonalds, and the general term "dinner". Sites grouped under the heading local manufacturing and community services included Bee Maid Honey, Lucerne Dairy, the fire department, a water plant, a pet shop and others. Parks identified by students as field trip sites were Rundle Park, Gold Bar Park, Hawrelak Park, Wayland Park in Regina, and Forest Heights Park. The subgroup entitled "museum" was used to categorize

field trips to the Stony Plain Multicultural Centre, the Space Sciences Centre, Fort Edmonton, the John Walter Site, the Muttart Conservatory, John Janzen Nature Center, Rutherford House and other specific sites, in addition to the general term "museum" given by students. Special events included sites which were set up to celebrate a special event such as the 630 CHED Haunted House for Halloween, the Ice Festival for Winter Cities, 1988, and the rodeo. Other cities were also grouped together. The "other" category was used for general identifiers which did not represent a specific site such as "others" and "a lot." Museum sites were identified most frequently by previsit group subjects as being a field trip location which they visited (67 references). The second most predominant field trip location given by this group was sports sites. The experimental group also listed museums most frequently (26 references) and secondly specified the names of sports sites and community services. The control group, however, listed sports sites most frequently (24 references), followed by play, theatre and musical productions (see Table 4).

TABLE 4
Frequency of References
for the Field Trip Groupings

Field trip grouping	Group: Previsit n = 77 f	Control n = 17 f	Experimental n = 39 f
Play/ theatre/ musical	9	13	0
Sports site	57	24	14
Restaurant	7	1	0
Community service	23	3	14
Park	10	2	1
Museum	67	4	26
Special event	1	0	2
Another city	1	0	1
Other	1	0	3
TOTAL	176	47	61

f - number of times the trip was mentioned

Question 4 of teacher questionnaires asked teachers to specify the names of field trips which their students had been on. The one control group teacher who responded, listed the Jubilee Auditorium (Edmonton Symphony Orchestra), Lake Eden and Snow Valley ski trips and the Londonderry Swimming Pool as being field trip sites. These would be categorized as one play/ theatre/ musical production and two sports sites. This correlates with the high proportion of control group subjects who identified field trip sites from these two categories.

Experimental group teachers identified names of play/ theatre/ musical productions, sports sites, museums and community services. One teacher from the experimental group listed the John Janzen Nature Centre and John Walter Museum as museum sites and skating as a sports event. The ballet and a play entitled Beauty and the Beast (play/ theatre/ musical productions) were given by a second experimental group teacher in addition to skating and the Water Park (sports sites). Another teacher identified the E. L. Smith Water Treatment Plant as being a field trip site (community services). Data, provided by experimental group teachers, were comparable to the relatively high proportion of museum, sports sites and community services identified by students from this group.

Most subjects from each group identified mathematics as being the subject which they preferred from a list of four core subject areas. The subject which was the second most common choice for subjects varied among the three test groups. Previsit group subjects selected science, control group subjects chose language and experimental group

subjects noted that social studies was their preferred subject area in school (see Table 5).

TABLE 5
Frequency and Percent Distribution of Subjects for the Preferred Subject Area

		Preferred subject			
Group		Science	Social	Language	Math
Previsit	f	29	3	6	42
	%	36.3	3.8	7.5	52.5
Control	f	2	1	4	10
	%	11.8	5.9	23.5	58.8
Experimental	4		6	2	32
	%	9.1	13.6	4.5	72.7

f - frequency
% - percent distribution on the group variable

Students were given an opportunity to respond to an open ended question on why they selected their preferred subject. The number of different reasons presented by students equalled 76. These reasons were placed in groups to facilitate analysis. The subgroup labelled as "enjoyable" was used to combine students' responses which defined the subject by using a positive word or phrase. Examples included the words fun, interesting and exciting. Students' reasons for preferring a subject which indicated their competence at the subject were grouped together. Responses included such answers as they knew a lot about it, they found it easy, they were good at it, it was fast and they were the first one done. The third group of liking some specific aspect was used to categorize responses such as liking

numbers, doing division, adding and spelling. Student responses which focused on one aspect of the class but did not specify their enjoyment of that activity were categorized as learning about something specific. Responses included learning about cells, learning about space, learning how to spell, studying about dinosaurs, learning about pioneers and other areas of learning. The fifth category grouped every student response in which they mentioned performing a specific activity in the class but did not indicate their enjoyment of that activity. Examples included doing multiplication, reading and writing stories, discovering things and working with numbers. Reasons which told what the subject was about, but did not express enjoyment, were also grouped. The heading "learn more" was used to combine every response which represented general learning. Items grouped in this category included such responses as "it helps you learn," "there are more things to learn about," "it teaches you a lot," "you learn neat things," "it helps when someone asks," and "it is good brain work for your body." Items indicating some type of future need were grouped together. The only two responses which presented this type of reason were "to add up your bills when you get older" and "to grow up and become a scientist." "Personal fulfilment" grouped the reasons which were based on a feeling which the subject evoked. An example of personal fulfilment given by a student was "when I do it, it makes me feel good." Students' reasons which were dependent on students liking the instructor of the class were entitled "teacher." Vague reasons such as "you do lots," "because," "you study about things," and "it's

better than others" were grouped under the heading "general comments." Students who could not explain why they preferred the subject were placed in one category as were those who presented reasons which did not relate to the subject chosen.

The distribution of students from each group, based on the categorization of reasons given for their subject preference, reveals that most students from both the previsit group (26.6%) and experimental group (32.5%) stated that they preferred a specific subject because they found it enjoyable. Most subjects from the control group (29.4%), however, indicated that a subject was preferred because it helped them to learn about a specific topic covered within the course (see Table 6).

TABLE 6
Frequency and Percent Distribution of Subjects
for the Preferred Subject Reasons

Reason for subject preference	Group					
	Previsit		Control		Experimental	
	f	%	f	%	f	%
Enjoyable	21	26.6	2	11.8	13	32.5
Competence	12	15.2	3	17.6	4	10.0
Like some aspect	4	5.1	3	17.6	4	10.0
Learn of something	8	10.1	5	29.4	2	5.0
Do something	9	11.4	1	5.9	7	17.5
Learn more	13	16.5	1	5.9	6	15.0
Future needs	2	2.5	0		0	
Personal fulfilment	1	1.3	0		0	
Teacher	1	1.3	0		0	
General comments	5	6.3	1	5.9	3	7.5
Other	2	5.9	1	5.9	0	

f = frequency
% = percent distribution on the group variable

The final question in the student background and demographic section of the questionnaire was used to differentiate students according to their perceived learning style. The question did not

examine the way students learn best, but the way students thought they learned best. In each of the three sample groups, the preferred learning style was through reading. The second method perceived by students in each group as being the way they learn best was by seeing and touching the thing. The medium identified by the least number of students for each of the three groups was television (see Table 7).

TABLE 7
Frequency and Percent Distribution of Subjects for the Perceived Learning Style

		Perceived learning style			
Group		Read	Told	TV	Experience
Previsit	f	42	13	2	22
	%	52.5	16.3	2.5	27.5
Control	f	9	4	0	4
	%	52.9	23.5		23.5
Experimental	f	18	6	1	17
	%	40.9	13.6	2.3	38.5

f - frequency
% - percent distribution on the group variable

Question 1 on the teacher questionnaire asked teachers to describe the introductory activities conducted as preparation for their field trip to the 1881 schoolhouse. Information obtained through this source helped to identify the past classroom experiences of control and experimental groups and contributed to the characterization of these groups. Teachers' responses to this question indicated that introductory activities, planned by the

schools, were similar. The control group teacher stated that pictures were used to discuss school in 1881 and students learned about the history of Edmonton as introductory activities to the field trip. One teacher from the experimental group indicated that the class discussed pioneers in social studies, went to the John Walter Museum, read about a pioneer school and Christmas concert in a booklet entitled "Settling the West," outlined the events which would take place in the 1881 schoolhouse and tried on the clothing which was provided for them. Students from a second class discussed early schoolhouses, drew pictures of themselves in costume and discussed expected behaviour of students as part of their introductory activities. The third experimental group teacher stated that the class had been studying pioneers in social studies.

An examination of the common introductory activities identified by teachers revealed that two teachers wrote that they included a discussion of pioneers in social studies. This was supported by the Grade 3 social studies curriculum which also indicates that students "inquire into issues related to community life during the times of early settlers" (Alberta Education, 1981, p. 28). Three teachers also mentioned that they studied early schoolhouses. Two experimental group teachers specified that students tried on costumes as an introductory activity. This focus on costumes as a separate event held within the classroom may have affected the results of this study in terms of students' affective, cognitive and long-term responses. Allowing time for students to try on costumes prior to their field trip date was an integral part of the costuming

component, however, which helped to reduce possible confusion on the field trip date.

4.2 Previsit Group Response

The previsit group questionnaire was given to classes who had not visited the 1881 schoolhouse previously. It included both cognitive and affective response measurements which were similar to those used for control and experimental groups.

The cognitive score to the noncostume component was calculated by adding the number of correct responses given for Questions 1 to 7 and adding one point for each item circled on Question 13 if it could be found in the school and one point for each item not circled if it would not be found in the school. The cognitive score to the costume component was obtained by adding the number of correct responses given for Questions 8 to 12. The mean cognitive noncostume component score of this group was 10.4 points out of 19 (55.9%). The mean cognitive costume component score was 1.2 points out of 5 (24.8%). This shows that students were able to answer correctly slightly over half of the noncostume component questions but correctly answered less than 25% of the costume component questions.

Student affective response to the noncostume component was computed by adding the points given for each level of agreement on Questions 1 and 2 and 5 through 12. Student affective response to the costume component was computed by adding the points given for

each level of agreement on Questions 3, 4, 13, 14 and 15. Five points were given for the strongest agreement and one point was given for the lowest agreement level. The mean affective noncostume component score was 36.8 and the mean affective costume component score was 17.5. These values were divided by the total number of statements in each to obtain a comparative rating value for the average statement. This was calculated as 3.7 (36.8 / 10) for the average noncostume component statement and 3.4 (17.5 / 5) for the average costume component statement. Given that 3 represents a neutral opinion toward each statement, students rated both the costume and noncostume components slightly higher than average. Student attitude regarding the noncostume component was slightly more favourable than their attitude toward the costume component (see Table 8).

TABLE 8
Mean, Minimum, Maximum and Standard Deviation of the Previsit Group (N = 80) for Test Scores

Test	Mean	Minimum	Maximum	SD
Cog NC	10.4	6	15	1.81
Cog C	1.2	0	4	.95
Aff NC	36.84	23	49	6.11
Aff C	17.5	6	25	5.03

Cog NC = cognitive noncostume component
Cog C = cognitive costume component
Aff NC = affective noncostume component
Aff C = affective costume component

4.3 Control and Experimental Groups' Cognitive Responses

Null hypotheses 1a and 1b state that no relationship exists between the costuming of Grade 3 students in the Edmonton 1881 Schoolhouse and their cognitive response to both the costume and noncostume components of that program. An objective test aimed at testing student cognition was used to address these null hypotheses.

Part 2 of the control and experimental group questionnaires included the same questions as Part 2 of the previsit group questionnaire. Two questions (8 - what was found in the wall of the 1881 schoolhouse and 9 - about how much did the 1881 schoolhouse cost to build) were added to the control and experimental group questionnaires, however. These questions depended on straight recall from the educational program and could not be known by previsit group subjects. The results from the control and experimental group questionnaires revealed that many students were unable to answer Question 8 and teachers from several classes indicated that this information was not given during their program. Since this question was presented to only some of the classes, the cognitive score was computed without the addition of Question 8. The total number of questions comprising the measure of student cognition was 9 noncostume component questions and 5 costume component questions.

A cognitive score was obtained for the noncostume component by adding the number of correct responses given for Questions 1 through 9, excluding Question 8, and adding one point for each item circled on Question 15 if it could be found in the school and one point for

each item not circled if it would not be found in the school. The total number of points possible was 20. The cognitive score to the costume component was obtained by adding the number of correct responses given for Questions 10 through 14. The total number of points possible was 5. A total score was obtained by adding the costume and noncostume component scores.

The data obtained from the control and experimental groups showed that the mean total score of the experimental group (19.1 out of 25) was higher than that obtained by the control group (17.1 out of 25). The minimum score obtained by each group was the same. The maximum score received by the experimental group, however, was higher than the maximum control group score. This shows that subjects from the group who wore costumes could score as low as those from the group who did not wear costumes, but that students from the costumed group tended to receive higher scores.

A subdivision of the data into costume and noncostume component scores showed that the mean noncostume component score of the experimental group (16.0 out of 20) was slightly higher than the mean control group score (15.5 out of 20). The scores for each of these groups was computed into a percent value by dividing the mean score of each group by the total score possible (20) and multiplying by 100. This was done so a comparison could be made with scores on the previsit group test which had fewer questions. Computing the mean scores into percent values yielded 77.7% for the control group and 79.8% for the experimental group on the noncostume component. It can

be seen that both the control and experimental groups received higher percentage scores than did the previsit group (55.9%).

A two-tailed *t* test was conducted on students' scores for the noncostume component to address null hypothesis 1a. Results from this analysis failed to show that a significant difference existed between the group which was costumed and the group which was not costumed in terms of student cognitive score on the noncostume component of the evaluation questionnaire ($t = -1.02$, $p = .313$). Consequently, null hypothesis 1a which states that there will be no significant relationship between the costuming of Grade 3 students in the Edmonton Public Schools Archives and Museum 1881 Schoolhouse and their cognitive response to the noncostume component of the program, could not be rejected (see Table 9).

Mean costume component scores showed that the experimental group had a higher mean score (3.1 out of 5) than the control group (1.59 out of 5). The costume component scores were computed into percent values by dividing the mean score of each group by the number of questions (5) and multiplying by 100. Computing the scores into percent values showed that students from the group who wore costumes were able to answer more than half of the costume component questions (62.2%). Students from the control group were only able to answer 31.8% of the costume component questions. The mean percent values of both the control and experimental groups, however, were higher than that of the previsit group (24.8%).

A two-tailed *t* test on cognitive score to the costume component of the program showed that a significant difference existed between

groups who were costumed and groups who were not costumed (t = -3.87 p < .01). Null hypothesis 1b, which states that there will be no significant relationship between the costuming of Grade 3 students in the Edmonton Public Schools Archives and Museum 1881 Schoolhouse and their cognitive response to the costume component of the program, was rejected based on the findings from this statistical analysis (see Table 9).

TABLE 9
Two-tailed t Tests on Control and Experimental Groups' Cognitive Scores

Group	n	Mean	df	SD	t	p
		Noncostume component				
Control	17	15.5	59	1.23	-1.02	.313
Experimental	44	16.0		1.54		
		Costume component				
Control	17	1.59	59	1.12	-3.87	.000
Experimental	44	3.11		1.47		

It can be seen from the results of the t test for students' cognitive score on the questionnaire, that the provision of costumes for students to wear enhanced their knowledge about clothing styles worn by school children in the 1880's. Costumed students' knowledge of noncostume details identified as program objectives by the Bennett Environmental Education Center was not shown to be significantly improved or diminished, however.

The significantly higher cognitive costume component score received by the group who wore costumes, in comparison to the group who did not wear costumes, showed that students made cognitive gains on the aspect of programming which was manipulated through this research. Researchers tend to agree that the hands-on approach to learning fosters understanding. Shettel (1973) stated that "active participation heightens the acquisition and retention of information" (p. 40). In this study, the implementation of costumes into the educational program was treated as a supplementary activity aimed at contributing to the totality of the vicarious experience. Consequently, it seems likely that students who have seen and worn 1880's reproduction costumes would be more able to identify clothing which children would have worn during that time period than students who had no exposure to the costumes. Given that students received no supplementary instruction on the costumes except for informal discussions held within their classroom, students' ability to recognize 1880's clothing style was obtained through hands-on exposure to reproduction costumes.

Most research which has been conducted in the area of experiential learning has dealt with two methods of instruction that teach similar curricular materials. Bredderman (1982) stated that children in classes with activity programs tend to score better than students in classes without these activities, in terms of science process skills. Wright (1980) compared regular classroom instruction and hands-on museum instruction to find that the museum-educated group scored significantly higher on the posttest. Flexer and Borun

(1984) compared lecture, participatory machines in a museum exhibit and a combination of lecture and participatory exhibits. Significantly higher scores were obtained by the groups who had attended one of the instructional settings when compared to the group who had exposure to neither the lecture nor participatory exhibits. Unlike the study by Wright, results from the research by Flexer and Borun indicated that the lecture group scored significantly better than the participatory exhibit group and that no significant difference existed for the lecture group and the lecture and participatory exhibit combined group. The literature on children learning through hands-on experience tends to speculate on the effectiveness of this form of instruction but research directed toward this problem is inconclusive.

Student response to the noncostume component showed no significant increase or decrease of scores obtained by the costume group. Consequently, the distraction effect caused by reproduction costumes (Wells, 1988) was not supported through this study. Distractions have also been identified in other studies. Kimmel and Maves (1972) found that visitors to a gallery displaying paintings were distracted by dominant structural surroundings, mixed light fixtures, and wall colour. Melton (1972) studied the effect of incorporating period furniture into a painting gallery. It was found that the furniture distracted visitor attention from the art being displayed. The purpose of using it was to reduce museum fatigue, to present an image of the historical period represented and to represent the relationship of the furniture and paintings. This, he

said, was not sufficient to overcome the distraction effect. In this study, where the distraction effect was not evident, the positive feature of clearly representing an historical era would still be in effect. Students could also obtain an image of the relationship between historic costumes and the one room school house (dark colours of both, the functional warmth of clothing in winter). This, however, was not measured. The one informal comment given by a student not used in the test groups, which indicated a comparative analysis, was that the softness of the clothing was advantageous for sitting on the hard benches.

An item analysis was conducted on both costume and noncostume component questions to determine the responses which were preferred by control and experimental group subjects. The greatest number of students from each of the control and experimental groups selected the correct responses for Questions 1, 2, 3, 4, 5, 7 and 9 on the noncostume component of the objective test and correctly identified the books, slate pencil, straw bail, drinking fountain, desks, bell, pencils, willow switch, windows and the clock as being present or absent in a school from 1881. Question 6, which asked the area to which Edmonton belonged in 1881, was correctly answered by most students from the group which wore the reproduction costumes (63.6%). Most students from the control group (52.9%), however, selected distracter (a) for Alberta as the correct response. The second most frequently chosen response was Alberta for the experimental group (27.3%) and the Northwest Territories for the control group (41.2%). Students' responses for the selection of

items which would exist in a one-room schoolhouse from 1881 showed that the greatest proportion of students from both the control and experimental groups incorrectly chose the dunce chair and the chalk. The popular selection of the dunce chair was probably encouraged by the focus which has been placed on this form of discipline in pioneer classrooms. Mike Kostek, archivist at the Edmonton Public Schools Archives and Museum, however, stated that this form of discipline is not supported in the available documentation of Edmonton public schools (M. Kostek, personal communication, 1988). The selection of chalk by most students in each group was probably a result of their using chalk in the program. The interpreter indicated that students in the 1880's would have used a slate pencil but that the students participating in the program would use chalk instead. The children, however, may have attended more to the materials which they were exposed to than to the interpreter's explanation.

An item analysis on costume component questions revealed that most students (47.1%) from the control group selected photograph (a) as the correct response to Question 10 illustrating photographs. The second most frequently chosen answer was (b) (35.3%). Most experimental group subjects chose alternative (b) as the correct answer (45.5%). The second most frequently chosen answer was (c) (31.8%). The correct photograph (c) was slightly more favourable to the experimental group but in neither group did students choose it most frequently. This question was the most difficult since it required students to take in information from a photograph and break it into identifiable features which would either place it in or

exclude it from an 1880's time period. Distracters for this question were chosen due to the similarity of surroundings in each, necessitating the examination of students within the school grouping. Distracting information such as the number and position of students would need to be mentally excluded by students for them to make a correct choice. This question would, consequently, fit into Bloom's level of cognition identified as analysis (Good & Brophy, 1977). Students could also find this question difficult since they would need to translate information obtained from a multisensory experience into a purely visual format. This represents a higher level of abstraction (Dale, 1969).

Questions 11 through 14 represented a different thought process than Question 10. Students needed to observe their own costume and the costumes of others, recognize identifiable style lines and identify the appropriate drawing from a set of four line-drawings. Distracting visual stimuli were removed from these questions and costumes were illustrated in their simplest form. Prince (1982) indicated that line-drawn representations are particularly effective at illustrating a point and that students learn more from line-drawings and models than from photographs or original objects. The results of this study may have consequently been biased by the predominant use of line-drawn illustrations. Student response to the identification of a photograph was answered correctly by fewer students. Their response to a presentation relying on the use of original artifacts may have also produced different results. Contrary to Prince's comments, Dale's cone of experience suggested

that line-drawn illustrations are a more abstract form of presentation than either photographs or original artifacts (Dale, 1969). In this sense, wearing a reproduction costume could create in students a deeper understanding of costumes from the 1880's, a level of cognition which was not measured through the test method utilized.

Most students from the control group (76.5%) and from the experimental group (79.5%) chose alternative (d) for Question 11 (the correct response) as the dress which would have been worn by a school girl in the 1880's. The distracter chosen by the second highest number of subjects from each group was alternative (b), showing a floor length dress with a ruffle at the lower edge (control group - 17.6%, experimental group - 18.2%). Most students (55.8%) from the control group chose alternative (d) as the correct response to Question 12. This line-drawn illustration featured a girl wearing a long dress with a ruffle on the lower edge. The experimental group, however, selected the correct answer (b) most frequently. Distracter (c) on Question 13, which showed a boy with rolled up pants and suspenders, was the preferred alternative of control group subjects (70.6%). Experimental group subjects preferred the correct response (a) for this question (75.0%). The final question, showing line-drawings of children in costume, was answered correctly (alternative b) by most students from the experimental group (67.4%). Subjects from the control group, however, selected distracter (a), illustrating a boy wearing short pants and suspenders, most frequently (64.7%).

The item analysis of costume component questions shows that the experimental group was more able to identify clothing styles which would have been worn by school children in 1881. The greatest number of students from the experimental group selected the correct response for each line-drawn illustration question. Incorrect distracters, however, were selected most frequently by control group subjects for every question except Question 11. Ruffles on girls' clothing seemed to be a favoured detail by experimental group students. Of the 17 subjects from the control group, 15 students chose a garment with ruffles for both Questions 11 and 12. Most of the subjects who chose the correct answer for Question 11, chose alternative (d) for Question 12. This garment was the only answer which showed ruffles on the lower dress edge. Of the 43 experimental group subjects, 24 chose the correct answer for both Questions 11 and 12. This was the most preferred combination of responses. The combination of answers to Questions 11 and 12 preferred by the second highest number of subjects was the correct response for 11 and the long ruffled dress for Question 12 (10 subjects). This shows that, although the trend to select dresses with ruffles along the lower edge was evident for both control and experimental groups, the students who wore authentic reproduction costumes were more able to select the correct costume for both questions.

Students' choices for each of the two questions pertaining to boys' clothing were also related and showed evident trends. The control group subjects were most likely to select alternative (c) for Question 13 and (a) for Question 14. Ten of the 17 subjects in the

control group made this combined selection. The feature which differentiates these illustrations from the other alternatives is the suspenders. Students who did not wear authentic reproduction costumes needed to base their choice on some feature which they could associate with pioneer clothing. For many, this was the easily identified suspenders. The three subjects from this group, who selected alternative (d) for Question 13, selected alternative (c) for Question 14. These students were also basing their choice on an identifiable but erroneous style line (gathered sleeves and breeches). Only one student from this group correctly identified the boy's costume for both Questions 13 and 14. An obvious improvement in correct response rate was evident in the experimental group. Of the 43 subjects, 26 made the correct costume selection for both Questions 13 and 14. The other responses within the cross tabulation of Question 13 and 14 were distributed among the remaining choices such that no other cell had a count exceeding 4.

Two-tailed t tests were used to determine if a significant difference existed between the cognitive noncostume component scores of male and female subjects. The results from these tests failed to show that a significant difference existed for either the control group ($t = -1.35$, $p = .196$) or the experimental group ($t = -1.76$, $p = .089$). Two-tailed t tests were also used to determine if a significant difference existed between the cognitive costume component scores of male and female subjects. The results from these tests also failed to show that a significant difference existed for either the control group ($t = -0.38$, $p = .711$) or the experimental

group (t = -1.09, p = .281). Consequently, the test used to measure students' cognitive costume and noncostume responses failed to show that a significant difference existed between male and female subjects in terms of these variables (see Table 10).

TABLE 10
Two-tailed t Tests on Males' and Females' Cognitive Scores

Group	n	Mean	df	SD	t	p
Control group noncostume component						
Males	10	15.2	15	1.03	-1.35	.196
Females	7	16.0		1.41		
Control group costume component						
Males	10	1.5	15	0.97	-0.38	.711
Females	7	1.7		1.38		
Experimental group noncostume component						
Males	20	15.5	42	1.85	-1.76	.089
Females	24	16.3		1.13		
Experimental group costume component						
Males	20	2.9	42	1.66	-1.09	.281
Females	24	3.3		1.27		

An observation of students' responses to individual questions comprising the costume component score did not show a consistent pattern for male and female scores. Girls from the control group scored better than boys on Questions 10, 11, 13 and 14. Boys scored

better on Question 12 (a question pertaining to girls' clothing). Girls from the experimental group scored better on all the line-drawn illustrations while a higher proportion of boys correctly answered Question 10.

4.4 Control and Experimental Groups' Affective Responses

Null hypotheses 1c and 1d state that no significant relationship will exist between the costuming of Grade 3 students in the Edmonton 1881 Schoolhouse and their affective response to both the costume and noncostume components of that program. A Likert scale was devised to measure student attitudes to the program in terms of how well they liked it and to what extent it made them feel like school children from the 1880's.

The questions used for the affective portion of the control and experimental groups' questionnaire were the same as those used in the previsit group questionnaire with the wording changed to the past tense. The statements pertaining to student attitudes toward the noncostume component of the questionnaire were Questions 1, 2, 5, 6, 7, 8, 9, 10, 11 and 12. Each sentence was worded in the positive form such that a high level of agreement would represent a positive attitude toward the program. Questions pertaining to student affective response to the costume component of the program were Questions 3, 4, 13, 14 and 17 for students who did not wear a costume and Questions 3, 4, 15, 16 and 17 for students who did wear a

costume. A score was obtained for each component by adding the values assigned to each level of agreement such that 1 represented the lowest level and 5 represented the highest level.

A comparison of mean values for the two groups showed that the experimental group had a higher mean affective rating score (61.1) than did the control group (51.1). These mean values were divided by the number of statements to obtain an average rating given to each statement. This was calculated as 4.1 (61.1 / 15) for the experimental group and 3.4 (51.1 / 15) for the control group.

Subdividing the affective score into costume and noncostume components showed that mean values of both the affective costume and affective noncostume component rating scores were higher for the experimental group. The average ratings given to noncostume and costume component statements were calculated by dividing the mean score for each of these components by the total number of statements. The control group gave the average noncostume statement a rating of 3.8 (37.7 / 10) while the experimental group gave the average noncostume statement a rating of 3.9 (39.3 / 10). Both values were slightly higher than the previsit group average rating of 3.7. The minimum score given by a student from the control group (21) was close to that given by a student from the experimental group (23). The maximum score given by the control group (46) and by the experimental group (50) were also fairly close.

A two-tailed t test failed to show that a significant difference existed between the affective noncostume component scores of control and experimental groups. Consequently, null hypothesis 1c,

stating that there will be no significant relationship between the costuming of Grade 3 students in the Edmonton Public Schools Archives and Museum 1881 Schoolhouse and their affective response to the noncostume component of the program could not be rejected.

An average rating for costume component statements was obtained by dividing the group mean score by the number of costume component statements. The control group gave the average costume component statement a rating of 2.7 (13.7 / 5) . This value is lower than the average rating of 3.5 (22.4 /5) given by the previsit group. The experimental group, however, gave the average costume component statement a rating higher than either group (4.5). The maximum score given by the control group (24) and by the experimental group (25) on the costume component were very close. It is interesting to note, however, that the minimum rating given by the control group (5) was considerably lower than that given by the experimental group (14).

A two-tailed t test comparing the mean scores of control and experimental groups on the affective costume component showed that the F value was significant ($F = 3.30$, $p < .01$) for the pooled variance estimate. The separate variance estimate used for this analysis showed that a significant difference existed between the control and experimental groups on affective costume component scores ($t = -6.21$, $p < .01$). Kerlinger (1986) noted that homogeneity of variance is needed when parametric statistics are used. For this reason, a Mann-Whitney nonparametric test was used to confirm if a significant difference existed between control and experimental groups. The results from this test also showed that the difference

was significant (U = 50.0, p < .01). This confirmed the results obtained from the separate variance estimate. Consequently, null hypothesis 1d, stating that there will be no significant relationship between the costuming of Grade 3 students in the Edmonton Public Schools Archives and Museum 1881 Schoolhouse and their affective response to the costume component of the program, was rejected (see Table 11).

TABLE 11
Two-tailed t Tests on Control and Experimental Groups' Affective Scores

Group	n	Mean	df	SD	t	p
		Noncostume component				
Control	17	37.7	58	6.16	-0.81	.419
Experimental	43	39.3		7.42		
		Costume component				
Control	15	13.7	54	5.15	-6.21	.000
Experimental	41	22.4		2.82		

The tests of significance on the costume and noncostume components showed that the group who wore authentic reproduction costumes to the 1881 schoolhouse rated the costumes higher than the group who was given the option of providing their own costumes. Students' ratings of the noncostume component, however, were not found to be significantly different.

One factor which may have affected student affective response toward the costume component was the small number of control group

subjects who reported to have worn costumes. Only 2 of the 17 subjects stated that they wore a costume. The remaining 15 subjects, who did not wear a costume, responded to the questions asking if they wished that a costume could have been worn and if a costume would have made them feel more like a student from 1881. Their answers were based primarily on speculation rather than feelings derived from a concrete experience. The reason for students not wearing costumes can not be determined. Students may have been conforming to peer pressure, been unable to acquire a costume or simply had no desire to wear a costume. This would certainly affect their attitudes toward wearing a costume. Every student from the experimental group who responded to the questionnaire, however, was reacting to a similar situation in which they wore a costume provided for them. Their answers were based on a concrete experience rather than speculation.

A notable observation in the data obtained from the control and experimental group questionnaire regarded Question 15. Only five students from the experimental group gave the statement "I liked getting dressed to look like a student from 1881" a rating less than 4. Of these students, four came from one class and only one was female. A possible explanation for the higher number of students from one class having unfavourable attitudes toward their wearing costumes could be that time constraints necessitated sending the teacher a letter outlining the costumes shortly before their trip to the 1881 schoolhouse. The teacher of this class indicated that she had previously told students that they would be given the option of wearing costumes which they had put together or wearing their regular

clothing. The inclusion of reproduction costumes into the program, consequently, marked a change in students' expectations. The teacher of this class indicated, in the written questionnaire, that children were apprehensive about the prospect of trying on reproduction costumes but became more enthused when they tried them on. Student affective response may have been affected by this process. Mulcahy (1984) stated that, for learning to occur, students need to foresee the event as being enjoyable. This requisite to learning may have been absent for some students.

A second explanation for this grouping of subjects who disliked wearing costumes could be related to group dynamics and peer pressure within the classroom. Cole (1984) discussed the concern that children have toward their peers. This topic was not addressed by the research procedure utilized, however.

Pearson correlation coefficients were used to test the relationship of affective costume and noncostume component subdivisions. Questions 1, 5, 6, 7 and 8 were grouped to identify student enjoyment of the noncostume component. Questions 2, 9, 10, 11 and 12 measured the extent that noncostume component activities contributed to subjects' perception of themselves being students from the 1880's. Question 13 (for students who did not wear a costume) and Question 15 (for students who did wear a costume) were used to measure student enjoyment or perceived enjoyment of wearing a costume. Questions 14 (for students who did not wear a costume) and Question 16 (for students who did wear a costume) in addition to Questions 3, 4 and 17 provided a quantitative measure of the extent

that students felt like they went to school in the 1880's based on their appearance.

The Pearson correlation coefficients obtained for the control group showed a significant correlation between students' rating of how they liked the noncostume component and the extent that it made them feel like a student from the 1880's. A significant correlation was also found for students' enjoyment of and feeling derived from the costume component. Both relationships were positive. The relationship between the subdivisions of the noncostume component (r = .56) were slightly more strongly related than the subdivisions of the costume component (r = .51) for the control group (see Table 12).

TABLE 12
Pearson Correlation Coefficients for Control Group
on Subdivided Affective Scores.

	Like NC	Feel NC	Like C	Feel C
Like NC		r=.56 p=.021 n=17	r=.11 p=.689 n=16	r=.36 p=.166 n=16
Feel NC			r=-.08 p=.772 n=16	r=.47 p=.065 n=16
Like C				r=.51 p=.050 n=15
Feel C				

Like NC - affective noncostume statements indicating levels of student enjoyment
Feel NC - affective noncostume statements indicating levels of student empathy
Like C - affective costume statements indicating levels of student enjoyment
Feel C - affective costume statements indicating levels of student empathy

Pearson correlation coefficients calculated for the experimental group showed a significant correlation between liking the noncostume component and the way it made students feel. Students' perception of the extent that both costume and noncostume components made them feel like students from the 1880's were also correlated. Unlike the control group, the correlation between the liking of costumes and the extent that costumes made subjects feel like students from the 1880's was not significant for the experimental group. In fact, this was the weakest relationship for the experimental group (r = .18). The relationship for the extent that the costume and noncostume

components made subjects feel like students from the 1880's was the strongest (r = .63) (see Table 13).

TABLE 13
Pearson Correlation Coefficients for Experimental Group on Subdivided Affective Scores

	Like NC	Feel NC	Like C	Feel C
Like NC		r=.56 p=.000 n=43	r=.21 p=.167 n=43	r=.25 p=.114 n=42
Feel NC			r=.23 p=.147 n=42	r=.63 p=.000 n=41
Like C				r=.18 p=.268 n=41
Feel C				

Like NC - affective noncostume statements indicating levels of student enjoyment
Feel NC - affective noncostume statements indicating levels of student empathy
Like C - affective costume statements indicating levels of student enjoyment
Feel C - affective costume statements indicating levels of student empathy

Two-tailed t tests were used to determine if a significant difference existed between the affective noncostume component rating scores of male and female subjects. The results of these tests failed to show that a significant difference existed for either the control group (t = -1.17, p = .260) or the experimental group (t = -1.33, p = .192).

Two-tailed t tests were used to determine if a significant difference existed between the affective costume component rating scores of male and female subjects. The results of these tests showed that a significant difference existed between male and female subjects of the control group in terms of their affective costume component rating scores ($t = -3.65$, $p < .01$). No significant difference was found between experimental group male and female ratings of the costume component ($t = -1.90$, $p = .065$) (see Table 14). Mean values showed that costume ratings given by boys from both the control and experimental groups were lower than ratings given by girls. Only in the experimental group, however, was this difference significant. This implies that when students were given the option to wear reproduction costumes, boys tended to rate them lower than girls. In a situation where every student was given a reproduction costume, however, boys did not rate them significantly lower than girls. It is possible that this relates to peer pressure. Boys from the costumed group were certain that every other boy in that class would wear a costume similar to their own. Consequently, they would not look or feel out of place in the group.

TABLE 14
Two-tailed t Tests on Males' and Females' Affective Scores

Group	n	Mean	df	SD	t	p
Control group noncostume component						
Males	10	36.2	15	6.68	-1.17	.260
Females	7	39.7		5.09		
Control group costume component						
Males	9	10.8	13	3.46	-3.65	.003
Females	6	18.0		4.20		
Experimental group noncostume component						
Males	19	37.6	41	7.21	-1.33	.192
Females	24	40.6		7.46		
Experimental group costume component						
Males	18	21.4	39	3.15	-1.90	.065
Females	23	23.1		2.39		

4.5 Control and Experimental Groups' Long-term Responses

Null hypotheses 1e and 1f state that no significant relationship will exist between the costuming of Grade 3 students in the Edmonton 1881 Schoolhouse and their long-term recall of appropriate costume and noncostume details. An open-ended question, given to students two weeks after their field trip, was used to obtain this measure.

A comparison of the number of references given by control and experimental group subjects showed that the mean number of appropriate long-term noncostume references given by the group which wore costumes (9.2) exceeded those given by the group which did not wear costumes (6.5). The least number of references given by a student in each of the two groups was 3. The maximum number of costume references given by a student in the experimental group was 29 while the control group students only gave a maximum of 13 descriptions. The mean number of inappropriate noncostume descriptions given by the experimental group (.54), however, also exceeded those given by the control group (.30). The minimum number given by each group was 0, while the maximum number was 2 for the control group and 4 for the experimental group.

The mean number of appropriate costume references given by the experimental group (2.8) exceeded those given by the control group (2.1). The mean number of inappropriate costume references was greater for the control group (.30) than for the experimental group (0.08). The minimum number of inappropriate costume references provided by both the control and experimental groups was 0, while the maximum number was 1. The minimum number of appropriate costume references given by the experimental group (0) was less than that of the control group (1). The maximum number of appropriate costume references, however, was greater for the experimental group (9) than for the control group (5). The larger range of responses given by the experimental group indicates that students who were given the opportunity to try on reproduction costumes had differing levels of

attention to the costumes which were worn. The literature supports these findings by suggesting that students attend to details which meet their individual needs based on their past experiences. Blyth (1984), Booth, Krockover and Woods (1982), Butler (1968), Cole (1984), Draper (1977), Graburn (1977), Herbert (1982), Jensen (1972) and Shuh (1972) noted that past experiences of an individual effect the way that new experiences are perceived.

Two-tailed t tests were used to determine if a significant difference existed for the number of appropriate costume and noncostume items given by students from the control and experimental groups. The separate variance estimate was used for the noncostume component due to the significant variance which existed between the group who wore reproduction costumes and the group who did not wear reproduction costumes ($F = 4.41$, $p < .05$). A Mann-Whitney nonparametric test was also used to verify the relationship between the groups.

A two-tailed t test showed that no significant difference existed between the number of noncostume details given by students who wore the reproduction costumes and students who did not wear the costumes ($t = -1.15$, $p = .267$). The results from this test were consistent with the results obtained from the nonparametric test ($U = 50.5$, $p = .3758$). A second two-tailed t test showed that no significant difference existed between the number of costume details given by students who wore the reproduction costumes and students who did not wear the costumes ($t = -0.74$, $p = .465$) (see Table 15). Null hypothesis 1e, stating that there will be no significant relationship

between the costuming of Grade 3 students in the Edmonton Public Schools Archives and Museum 1881 Schoolhouse and their long-term recall of appropriate noncostume details, and null hypothesis 1f, stating that there will be no significant relationship between the costuming of Grade 3 students in the Edmonton Public Schools Archives and Museum 1881 Schoolhouse and their long-term recall of appropriate costume details, could not be rejected. This may have indicated that students' ability to recall costume and noncostume details was not influenced by their wearing reproduction costumes. An alternative explanation for this failure to reject the null hypothesis could be dependent on the interview procedure utilized. Students' anxiety and possible uncertainty regarding the researcher's expectations could have inhibited their responses. During the interview process, it was noted that many students appeared to be nervous. This would possibly reduce the information which they could recall from the program. One subject could not think of anything to say and declined participation in this phase of the research study.

TABLE 15
Two-tailed t Tests on Control and Experimental Groups' Appropriate Long-term Scores

Group	n	Mean	df	SD	t	p
		Noncostume component				
Control	10	6.50	21	3.60	-1.15	.267
Experimental	13	9.23		7.55		
		Costume component				
Control	10	2.10	20	0.45	-0.74	.465
Experimental	12	2.75		2.42		

The type of clothing references given by individual students from both the control and experimental groups varied greatly. The most vague reference to clothing given by a control group subject was that clothing was different. One student from the control group specified that students wore old clothing, girls wore dresses and bonnets while boys wore knickers and shirts. This represented the most specific response given on clothing. The words "old-fashioned" and "pioneer" were also used by some students to describe 1880's clothing.

Students who were given reproduction clothing to wear for one morning in the 1881 schoolhouse also provided different levels of response to the open-ended question presented to them. One student from this group did not mention any aspect of clothing. Another student from the same group, however, gave this description of students' clothing styles.

The kids would look like - One kid would have brown clothes on and a hat and the girls would have - Some girls would have blue

> clothes, long dresses. And I'd be wearing a black coat and brown pants and we'd have lamps and - Most kids had black shoes. Only two girls had two - brown shoes. And some of the girls - Some of the girls were wearing white things around their neck and the little kids were wearing nice red skirts. (student interview)

This student was taking most of his insights on clothing from the costumes which were worn by students during the program. Two students from this group discussed subjective views on the clothing. One student said that "it would be hard to walk around in all those clothes". Another subject from this group said that the students would look silly. Subjective comments on the way clothing would feel and look were not given by any student from the control group. This seems to suggest that students who wore costumes were able to relay the experience using a higher level of cognition based on Bloom's taxonomy (Good & Brophy, 1977). Students who wore the costumes could begin to understand how students from the 1880's may have felt in addition to realizing how they looked.

A comparison of students' qualitative descriptions of clothing worn by 1880's school children shows that colour was mentioned by three students from the experimental group (10 colour references). No colour references were given by control group subjects. Underclothing was mentioned by one girl from the experimental group who stated that "the girls had to wear a whole bunch of things under their dresses". Students from the control group, however, did not mention underclothing which would have been worn. Clothing specified by the 13 students who had worn reproduction costumes and responded

to the oral question included suspenders (1), long socks (1), black socks (1), shirt (1), white shirt (1), jacket (1), old jacket (1), black coat (1), bonnets (1), high buttoned shoes (1), brown shoes (1), black shoes (1), dress (1), chemise (1), apron (1), slip over top (1), white things around their necks (1), red skirts (1), pants (1), short pants (1). Specific terms used by the 10 control group subjects to identify clothing included bonnets (2), straps (motion to suspenders) (1), hats (1), dresses (4), suits (1), knickers (1) and shirts (1). The numbers in brackets indicate the number of times the item was mentioned. This analysis suggests that students who wore reproduction costumes used a greater number of descriptions to identify children's clothing from the 1880's.

The aspects of the noncostume component mentioned by students in the long-term recall measure from both the control and experimental groups also varied between students. Items defining what the school looked like included the water basin, books, one room, brown colour, windows, door, porch, stove, desks, recitation platform, slates, chalk-board, outhouse, bell, position of teacher and students, lantern, wooden material, and surrounding buildings. Activities identified as part of school events included arithmetic, reading, recess, singing of God Save the Queen, spelling bee, health inspection, disciplinary measures, writing, history, geography, patriotic lesson and the flag. Students also gave subjective thoughts about the program, about the past and offered comparisons to the present. For each of these items, students either mentioned it briefly or presented more than one description to identify the item.

Students' attention to select details was possibly influenced by their individual perceptions and by their past experiences.

Questionnaires given to teachers of the control and experimental groups provided additional insights on student long-term response to the educational program. This technique was used by Borun (1977). Only one of the two teachers from the control group responded to this questionnaire. The aspect which affected student attitude the most, as identified by the teacher, was the willow switch as a disciplinary measure. Students' discussions with others dealt with the willow switch, the spelling bee, slates, desks, using "sir" to address the teacher and recess games.

All three teachers from the experimental group returned the written questionnaire. One teacher indicated that changing into period clothing affected student attitude the most. A second teacher identified discipline as being the factor which affected student attitude the most and noted that they most frequently discussed the costumes, the desks and the willow switch with parents and other students. The third teacher listed both discipline and clothing as being the most influential factor affecting student attitude to the program. The teacher expanded this reply by stating that students were "amazed (particularly the girls) at the amount of clothing worn by a pioneer child". According to the results obtained from teacher questionnaires, the trend seems to prevail for students to have an interest in the disciplinary measures utilized in the school. Costumes, when incorporated into the program, serve as an added area receiving student attention.

4.6 Relationship among Cognitive and Affective Responses

Null hypotheses 2, 3 and 4 state that there will be no significant relationships among any combination of students' cognitive and affective responses to the costume and noncostume components of the program. Pearson correlation coefficients on students' cognitive and affective responses to the costume and noncostume components were used to address these null hypotheses.

Results from the Pearson correlation coefficients only indicated the existence of one significant relationship. This was the relationship between affective response to the noncostume component and affective response to the costume component given by experimental group subjects only ($r = .53$, $p < .01$). The test of correlation for control group subjects did not yield significant results ($r = .40$, $p = .140$). This relationship was stronger than all other relationships for the control group, however. Pearson correlation coefficients showed that hypothesis 4, stating that their will be no significant relationship between the students' affective responses to the noncostume component of the program and their affective responses to the costume component of the program, could be rejected for the experimental group. The value of Pearson's r for the experimental group is positive. This suggests that the relationship between students' ratings of the noncostume component and students' ratings of the costume component was positive. All other null hypotheses dealing with the relationship among cognitive and affective responses

(2a,b,c and 3a,b) can not be rejected through this research analysis (see Tables 16 and 17).

TABLE 16
Pearson Correlation Coefficients for Control Group on Affective and Cognitive Costume and Noncostume Scores

	Cog NC	Cog C	Aff NC	Aff C
Cog NC		r=-.01 p=.960 n=17	r=-.11 p=.687 n=17	r=.22 p=.425 n=15
Cog C			r=.20 p=.433 n=17	r=-.14 p=.608 n=15
Aff NC				r=.40 p=.140 n=15
Aff C				

Cog NC - cognitive noncostume component
Cog C - cognitive costume component
Aff NC - affective noncostume component
Aff C - affective costume component

TABLE 17
Pearson Correlation Coefficients for Experimental Group on Affective and Cognitive Costume and Noncostume Scores

	Cog NC	Cog C	Aff NC	Aff C
Cog NC		r=.07 p=.631 n=44	r=-.11 p=.494 n=43	r=-.07 p=.652 n=41
Cog C			r=-.09 p=.571 n=43	r=-.06 p=.698 n=41
Aff NC				r=.53 p=.001 n=40
Aff C				

Cog NC - cognitive noncostume component
Cog C - cognitive costume component
Aff NC - affective noncostume component
Aff C - affective costume component

An analysis of the literature relating learners' cognitive and affective responses tends to support the interrelationship of the two learning domains. Wolsk (1975) stated that "until the pupil has achieved a certain level of understanding, the whole subject is too remote and confusing to be of real interest, in the absence of real interest, what is learned will be too superficial to be effective in forming or changing attitudes" (p.8). Screven, in a conversation edited by Hicks (1986) supported this view that cognitive and affective responses are linked through experience. Draper (1977), Prince (1982) and Washburne and Wagar (1972) also indicated that interest and learning are related. Andrews (1984) conducted research

comparing four mannequin types. It was found that an increase in cognitive score was associated with a favourable attitude to only the abstract mannequin. An overall analysis of the four groups showed no significant relationship. Wells (1988), in a study conducted on children's responses to interpreter costume, found that no significant relationship existed between students' affective and cognitive responses. The results of this study are consistent with the findings obtained in the research conducted by Andrews (1984) and Wells (1988).

The comparison of cognitive responses to the costume and noncostume components and the comparison of affective responses to the costume and noncostume components were used to determine if a relationship existed for students' responses to the two aspects of programming with respect to one domain. Wells (1984) found that a significant correlation existed between students' affective responses to the costume component and their affective responses to the noncostume component for both the group who saw an interpreter dressed in costume and the group who saw an interpreter dressed in a uniform. The relationship for both groups was positive. The findings from this study found a significant correlation for affective responses to the costume and noncostume components only by the group who wore reproduction costumes. A significant relationship was not found for the group who was not provided authentic reproduction costumes. This may have resulted from the large proportion of this group who chose not to wear costumes.

4.7 Supplementary Qualitative Data

Student reaction to reproduction costumes was inferred from informal statements given by students not used in any of the test groups. The class which was photographed for the study was used for this purpose. The classroom teacher asked all students to write a letter about their field trip and about the costumes which they wore. Descriptions which reappeared in numerous letters included the fact that clothes were hot, many underclothes were worn and shoes made students' feet sore. A written description of the costumes given by one boy from this class shows how the unfamiliar experience of wearing a reproduction costume could be related to the more familiar experience of sitting on pillows. He stated:

> Someone came to give us some pioneer outfits to wear to the schoolhouse. The outfits were very hot and sweaty. There was a overcoat and a shirt under it. The costume the boys wore had had five parts to it the undershorts the pants and shirt and overcoat. And socks the socks were very long. And the pants had suspenders the jacket was very hot with the shirt under it. The costume felt very comfurtible but very hot. It was very soft when you sat down on the wooden seat. It made me feel like I was sitting on two pillows. The softness in the suit was very soft. The suit really helped to make the field trip more fun because it made me realy feel like I was realy a pioneer. (student letter)

Marcouse (1974) stated that "how we look, what we see, how we react to the same object is intensely varied and personal" (p.7) and

depends on an individual's past experiences. Consequently, students attend to different aspects of the costuming component to meet their individual needs.

The teacher from one experimental group returned 11 diary reports which students had written to describe their field trip. Six of the students mentioned wearing costumes. Two of the students indicated that they enjoyed wearing the clothing provided for them. These students, however, did not specify the type of clothing which was worn.

CHAPTER 5 - SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary and Conclusions

The given study was designed to address the problem statement: What relationship does reproduction costuming of the entire Grade 3 class at the Edmonton Public Schools Archives and Museum 1881 Schoolhouse have with the participants' cognitive and affective responses to costume and noncostume components of the educational program and on students' long-term recall of costume and noncostume details as compared to the existing program?

Instruments were designed to measure student cognitive response to the costume and noncostume components, affective response to the costume and noncostume components and long-term recall. Student background and demographic information was also obtained through the test instruments devised. Questionnaires designed for previsit, control and experimental groups were divided into three sections. The first part comprised the student background and demographic section, which questioned students on their sex, costume worn (if any), previous visits to the 1881 schoolhouse, past museum visits, field trips, preferred subject and perceived learning style.

Part 2 questioned students on items which had been identified as noncostume objectives of the 1881 schoolhouse. These included the flag, writing material, light source, heat source, reason for a

health inspection, area to which Edmonton belonged and method of punishment. An item included in the experimental and control group tests but not in the previsit group test asked students the approximate cost of building the school. A question requesting that students select items which would have been present in a school from the 1880's was also included in this measure.

Five costume component questions were designed to measure students' ability to recognize 1880's clothing styles. One item asked students to choose an 1880's photograph from a set of three pictures. The remaining four questions presented sets of four girls or four boys dressed in costume and respondents were asked to identify the illustration representing 1880's clothing.

Part 3 of the evaluation questionnaire measured students' affective responses to both the costume and noncostume components. The Likert scale, designed for this measure, asked that students circle one of five acceptance levels to given statements. Students were asked to state how well they liked or thought they would like the activities, using a slate, sitting in old school desks, learning things that children would have learned and the method of punishment. Statements were also included on how much subjects felt like students from the 1880's and whether the slates, the desks, learning things that children would have learned and the method of punishment made them feel like students from the 1880's. Students' enjoyment or speculative enjoyment of wearing costumes was also

questioned, in addition to the extent that costumes made them look and feel like students from the 1880's.

Data obtained from the student background and demographic section of the questionnaire were used to exclude subjects who were not from the Grade 3 level of instruction and those who had visited the 1881 schoolhouse previously. Following exclusion of classes and subjects who failed to meet the requisite conditions of this research, the resulting sample consisted of six previsit group classes (80 subjects), two control group classes (17 subjects) and three experimental group classes (44 subjects).

An analysis was conducted on the student background and demographic data by calculating frequency and percent distributions. Results from this analysis showed that the groups were comprised of approximately the same number of male subjects as female. Variations in this number were not significant. Most previsit and experimental group subjects stated that they visited two museums and most control group subjects indicated that they visited three museums. The question on field trips visited showed that most subjects from the experimental group listed one field trip site, most subjects from the control group gave the names of two or three field trip sites and most subjects from the previsit group listed three field trip sites. The most popular field trip site given by the previsit and experimental groups was a museum site. The control group listed sports sites most frequently. Teacher reports of students' field trips tended to confirm the results obtained from students' questionnaires. Mathematics was the preferred subject area for most

students from each of the three groups. Perceived learning style identified by the greatest number of students from each of the three groups was through reading. It can be seen, from these data, that student demographic information was fairly consistent among the three groups. Teacher response to the written questionnaire confirmed that introductory activities held prior to the field trip were similar for the groups. Most teachers indicated that their preparatory activities involved the discussion of pioneers in social studies.

Results obtained from the questionnaire and long-term measure were used to address the null hypotheses. A t test showed that null hypothesis 1a, stating that there will be no significant relationship between the costuming of Grade 3 students in the Edmonton Public Schools Archives and Museum 1881 Schoolhouse and their cognitive response to the noncostume component of the program, could not be rejected ($t = -1.02$, $p = .313$). Null hypothesis 1b, which stated that there will be no significant relationship between the costuming of Grade 3 students in the Edmonton Public Schools Archives and Museum 1881 Schoolhouse and their cognitive response to the costume component of the program, however, was rejected ($t = -3.87$, $p < .01$). This showed that students who wore reproduction costumes were more able to identify clothing styles from that era. Students who did not wear costumes were attracted to easily identified style lines such as the ruffle on the lower dress edge of girls' clothing and the boys' suspenders. Students' cognition of noncostume details was not shown to be increased nor diminished through the wearing of reproduction costumes.

Student response to the affective component of the questionnaire was used to address null hypotheses 1c and 1d. Null hypothesis 1c was not rejected. It stated that there will be no significant relationship between the costuming of Grade 3 students in the Edmonton Public Schools Archives and Museum 1881 Schoolhouse and their affective response to the noncostume component of the program ($t = -.81$, $p = .419$). A significant difference was found between the control and experimental groups in terms of their affective response to the costume component (null hypothesis 1d) ($t = -6.21$, $p < .01$). Students who wore reproduction costumes rated them more favourably than students who did not wear the costumes. Liking of noncostume and costume components and the extent that these components made subjects feel like students from the 1880's were found to correlate for control groups. The subdivisions of the affective measure were correlated only for the noncostume component of the experimental group. In effect, if students liked a component, they tended to state that it also made them feel like a student from the 1880's.

Null hypotheses 1e and 1f, dealing with long-term recall, could not be rejected through the use of two-taied t tests. The number of descriptions on both costume and noncostume components given by experimental and control group subjects two weeks following exposure to the program were not shown to be significantly different. Students from the experimental group, however, tended to use a greater variety of descriptions to identify clothing worn by 1880's school children. In addition, they used more subjective statements to describe costumes.

Null hypotheses 2, 3 and 4 stated that there will be no significant relationship among cognitive and affective costume and noncostume component scores. Pearson correlation coefficients were used to test the relationship between variables. The results showed that one significant relationship existed between experimental group affective response to the costume component and affective response to the noncostume component. All other relationships were not shown to be significant.

Findings from this study tend to support the use of reproduction costumes for students to wear in this historic site to provide an improved knowledge of historic clothing styles and an understanding of the feeling derived from wearing the clothes. This judgement may be subject to reinterpretation by an individual who does not have a close involvement with the program being evaluated.

5.2 Recommendations for Future Research

The following recommendations are based on the findings of this study and on the literature review. For ease of reference, these recommendations have been subdivided into three categories. The first recommendation includes suggestions for replicating the study, the second presents alternative methods which could be used and the third recommendation suggests questions which could be addressed.

1. The study presented in this masters thesis could be replicated using the following revisions:

a. More subjects should be included in future studies aimed at evaluating the effectiveness of reproduction costumes available for children to wear. Limiting factors incurred through this research were the April 30 deadline imposed by the Edmonton Schools Cooperative Activities Program, the interpreter's schedule and the number of Grade 3 classes scheduled to attend the 1881 schoolhouse in the two month time frame.

b. Students could be selected from classes who were scheduled to attend the schoolhouse during winter. Students for this study were selected from groups who attended the 1881 schoolhouse during the months of March and April when the temperature was fairly warm. Children who agreed to dress in 1880's reproduction costumes and be photographed for this masters thesis did so on a particularly hot day. This would certainly account for their report in written letters that clothing was hot to wear.

c. An alternative site could be selected. Each site has distinct goals and objectives which could affect student evaluation of wearing reproduction costumes. Museums and classrooms could also be considered as potential sites to incorporate reproduction costumes. Reproduction costumes sent to classrooms and not worn to the site could be more easily used in a classroom but the effect on student

response has not been determined. Marcouse (1974) stated that evaluation should be conducted to compare school loan services to on-site activities. A variable which could also be altered through this modification is the time taken for students to wear reproduction costumes. The shortest length of time would involve students trying on a costume, observing themselves and others in costume and then removing the costume.

d. Students from other grade levels could be tested. This would help determine if the results from this study could be generalized to students from other grades.

e. Students could change into reproduction costumes at the site rather than in their classroom. This study requested that students change into costume before travelling to the 1881 schoolhouse so program time would not be reduced. Future research should investigate this aspect of costume implementation.

2. Further research could use alternative methods for obtaining and analysing data. Borun (1977) stated that "since museum studies tend to involve not only measuring instruments and defining the very units of measurement, the best strategy incorporates overlapping approaches to allow cross-checking of findings" (p.48). Nielsen and Turner (1983) stated that a primary concept of evaluation is that it involve using more than one method for evaluation purposes. Patton (1980)

presented two paradigms for evaluation and program planning. The first is called the "hpothetico-deductive methodology" and involves quantitative data, experimental design and multivariate, parametric statistical analysis. The alternative paradigm, "holistic-inductive", is said to use qualitative data, open-ended interview, personal observation and holistic analysis. Possible methods which could be considered include the following:

a. Naturalistic evaluation

Otto stated that this type of evaluation "focuses more directly on current and spontaneous activities, behaviours and expressions rather than on a narrow set of prespecified objectives, responds to staff members needs for different kinds of information, and accounts for different values and perspectives" (p. 40). The validity of this type of evaluation could be in question if used in isolation. It would add qualitative data, however, which would supplement findings from more structured research and quantitative data.

b. Observation

The researcher could rely on data obtained from the observation of subjects dressed in reproduction costumes. Nielsen (1946) advocated this type of evaluation, stating that "the only method that can be employed to determine how museum visitors react is to observe the reactions of the visitor himself, in the context of specific museum situations, which may or may not be common to many museums" (p.103).

c. Content analysis of students' diary anecdotes

Data could be obtained from diaries written by students as part of their classroom activities. This type of information could present useful information on aspects of the program which made an impact on students' impressions. Diaries could be a form of thought presentation with which students are more familiar than the individual interview. Consequently, their responses would be less influenced by what they thought the researcher wished to hear. In addition, anxiety caused by the direct interview with the researcher would be greatly reduced.

d. Interview schedule

Future research could include an interview schedule allowing for more student - researcher interaction. The oral question presented to students in this research was designed to determine the aspects of programming at the 1881 schoolhouse which had the greatest impact on students. It is probable that students knew more about the program but were unable to recall those details. Prompts given by the researcher would help students to recall this information.

e. Students' drawings

Students' drawings could be used to reveal costume and noncostume aspects which had the greatest impact on students. Letters sent to the schoolhouse interpreter by students from one experimental group class used in this study showed such details as the willow switch, slate, recitation platform, picture of Queen Victoria, flag, exterior

of the building, interior of the building, teacher and students standing in the school and students standing alone.

3. Alternative questions could be addressed through selected research designs. Some of the issues which could be addressed in future research endeavours include the following:

a. A study could test the effect that reproduction costumes have on students with differing motivations and learning styles. The focus would then be on individual rather than group response. Greenglass (1986) utilized Hunt's Matching model for his study of adults.

b. A long-term study could be conducted to determine if students' learning through a purely visual format (museum exhibit) is enhanced by their having worn reproduction costumes previously. Isaacs (1977) stated that when individuals obtain a positive attitude toward a museum, they are more likely to learn from a museum in the future. Harrison presents additional insights on this issue. He stated that "none of the 'activities' in the museum [Geffrye Museum] are an end in themselves, but a means of developing in Tommy, or Mary, Reg or Beryl, a closer understanding and appreciation, an awareness of the differences, as well as of the similarities between things - and indeed between people - and a friendly cooperative approach to new situations, new experiences" (p.97).

c. A study could compare student response to wearing complete reproduction costumes such as the set prepared for this research project to more simply prepared add-ons such as pinafores worn over students' regular clothing. Many sites have adopted the add-ons as a less costly means of providing students with an opportunity to try on costumes.

d. Research could compare the results of costuming an entire class in reproduction costumes and costuming a few students for demonstration purposes. This alternative costuming program would also be more cost-efficient and, consequently, merits consideration.

e. Future research could examine exploration and play behaviours of children who are allowed to wear reproduction costumes. Switzky, Haywood and Islett use thed words novelty, ambiguity, incongruity, surprise and complexity to define exploration and familiarity, clarity, simplicity and congruity to define play behaviour. Children's response to novel and familiar settings was analysed by Falk, Martin and Balling (1978). They found, through observation, that students who were placed in an unfamiliar setting spent more time on nontask exploration behaviour than students who were familiar with the setting. Switzky, Haywood and Islett (1974) examined children's play and exploration behaviour when presented with shapes having varied levels of complexity. They found that children from four to seven years of age spent more time exploring objects with a greater degree of complexity and less time playing with these

objects. The fundamental difference between these two studies, looking at exploration caused by novelty, is that the former involved a specified task, while the later did not. Future research could determine if the incorporation of reproduction costumes in an unstructured environment elicits play or exploratory behaviour in children. A task specific program could also be examined to determine if costumes encourage off-task exploration causing students to be distracted from the task.

f. Supplementary materials aimed at teaching students about the reproduction costumes to be worn could be developed and evaluated in a future study. The impact of costumes, when complemented with supplementary materials was not addressed in this research project. An examination of the literature, however, suggests that an experience should not be provided to students in isolation but should be explained for a deeper understanding. Harrison (1967) stated that "it needs to be shown and seen, experienced and discussed in some way before it can be known" (p. 16). Buchman and Schwille (1983), Chapman (1982), Korzenik (1984), Lakota (1976) and Marcouse (1974) all indicated that an experience alone does not insure a meaningful learning of the subject demonstrated. Schools Council (1972) suggested that an audio visual medium be used to help students study the original.

g. Future research could examine children's perception of the historic past to determine if it is affected by, or if it affects

children's experience of wearing reproduction costumes. Comparisons of students with a sense of historical time duration to those without could be related in terms of the experience derived from wearing a reproduction costume.

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APPENDIX A

Dale's Cone of Experience

This page has been removed due to copyright restrictions

The missing page had an illustration of Dale's cone of experience.

It may be found in the following source:

Audiovisual methods in teaching (p. 107) by E. Dale, 1969, New York: The Dryden Press.

APPENDIX B

1881 Schoolhouse Program Handout

VISITING THE 1881 SCHOOLHOUSE

To:

From: Burt Demeries, Program Coordinator
Bennett Environmental Education Centre
and the 1881 Schoolhouse

(Booking Requests: June Wood, Secretary
Bennett Centre - 468-1438)

Information:

The enclosed information is intended to assist teachers who will be visiting the 1881 Schoolhouse during the current school term.

a. General outline of 1881 Schoolhouse lessons
b. Suggestion for dress
c. Route map
d. School Class Guest List (to be completed prior to your visit and presented to the '1881' Schoolteacher)

Confirmation:

Your class visit has been confirmed for -

Date: _____

Day: _____

Time: _____

Your 1881 Schoolteacher will be _____

Emergency Cancellation:

If an emergency occurs just prior to your 1881 School visit please contact Bennett Centre (June Wood at 468-1439) and also immediately inform your scheduled 1881 Teacher at their home number -

Mr. A. Lust 434-2963
Mrs. D. McKay 436-6455

Note. From the Bennett Environmental Education Centre, Edmonton, Alberta.
Reduced in size - 75%

INFORMATION FOR TEACHERS

'1881 SCHOOLHOUSE Lessons'

For 1987-88

The 1881 Schoolhouse is again open for your planned visit and active participation in school lessons. Members of the Centenary Committee responsible for the restoration of the Schoolhouse in 1982 recommended that school visits should provide present-day students with an opportunity to experience the nature and content of schooling as it was a century ago.

> The lessons (half-day) are suited to grades 3 to 6. Consideration may be given to other grades or special groups upon request.

Your 1881 Teacher

Your 1881 School Experience will be recreated with the help of one of our 1881 Schoolmasters. We are pleased to have:

Mr. Al Lust - Mr. Lust is well-known in our schools as a former teacher, principal and creative story-teller. He welcomes pupils as Major Stiff, the third teacher at the Schoolhouse in 1882.

Mrs. Donna McKay - Mrs. McKay is a former school teacher who will carry on the role of Edmonton's first schoolmarm, Miss Lillian Osborne, 1889.

Special teachers will occasionally conduct classes.

Other Personalities

Mr. Mike Kostek - Mr. Kostek needs little introduction as a long-time educator and author of LOOKING BACK - A Century of Education in Edmonton Public Schools. This book is available in all public school libraries. (If yours is missing, please call 422-1970 to arrange for another copy.) Mr. Kostek is currently Archivist at the Edmonton Public School Board Archives and Museum at McKay Avenue School.

The School Inspector - On occasion, Burt Demeriez or other persons will appear in the role of the Reverend A. Baird, Edmonton's first School Inspector.

Note. From the Bennett Environmental Education Centre, Edmonton, Alberta.
Reduced in size - 75%

Arrival at the 1881 Schoolhouse

1. Unless alternate arrangements have been made during initial booking, classes are scheduled for the following times:

   Morning Visit - 9:15 - 11:45 a.m.

   Afternoon Visit - 12:30 - 3:00 p.m.

2. Please inform the bus driver that the bus may be parked on 99 Avenue at the northwest corner of McKay Avenue School. There is limited parking available on site for parents' cars.

3. You are requested to have your students remain outside the Schoolhouse until a 'bell call' is sounded. This will give you an opportunity to meet with the 1881 Teacher inside the School to briefly discuss the planned activities.

4. Students will wear their regular footwear indoors, cleaning as needed on porch mats.

Parent Participation

There is room for a limited number of parents or other visitors in the back of the school room. Their presence in the classroom will be regarded as a normal occurrence similar to visits during spelling bees or other special events in the early days of schooling.

Class Preparations

1. Costumes: You and your students can have a more authentic experience by dressing in period costumes. You'll have more fun too! Improvise, using the attached dress-up suggestions.

2. Lunches: Students visiting in the morning should eat lunch after they return to their home school. Afternoon classes should eat before arrival. There is a historic Victorian park in the schoolyard. You may consider eating your lunches there if the weather is fine.

Follow-Up Information

1. A historical group picture will be taken during your visit. Photocopies for the students will be prepared at Bennett Centre by Mrs. Wood and forwarded to your school. Names of visiting teachers and parents are requested for picture titles, and will be obtained at the Schoolhouse.

2. Any follow-up materials intended for the 1881 Teacher (letters, assignments, or other) may be forwarded by school mail to Bennett Centre.

Note. From the Bennett Environmental Education Centre, Edmonton, Alberta.
Reduced in size - 75%

A Timetable for Sample Lessons

It may be necessary to vary the lessons to accommodate classes with students who have previously attended. For first-time groups, the following is a sample timetable.

1. Opening Exercises
   - Establishing 1881 discipline
   - Patriotism, Queen Victoria and the British Empire
   - Introduction to slates

2. Reading (including morality lesson)
3. Selected Lessons
   a) Numberwork - Roman numerals using slates and rapid calculation

   OR

   b) Penmanship - using traditional techniques with slates

   OR

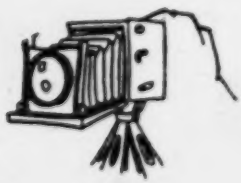
   c) Readings - (Tuesdays & Thursdays - Mr. A. Lust)
   Poems selected by Mr. Lust will be those which were memorized and recited by students who attended one-room schools during pioneer times.

   Some of the poems will be:

   The Village Blacksmith - Longfellow
   The Song My Paddle Sings - Johnson
   A Canadian Boat Song - Moore
   The Rapid - Sangster
   A Nest in the Pocket - Anon.
   The Highwayman - Noyes
   My Shadow - R.L. Stevenson
   If - Kipling
   School Days - Cobb; and others.

   Selected poems will be based on grade level.

4. Recess
   - Toilet break (Teachers and/or parents to accompany students using amenities in McKay Avenue Archives Building.)
   - Student, teacher and parent participation in recess activities from the past.
5. Health Inspection
6. 1881 Schoolhouse History
   - Early Edmonton and its schools
7. Closing Activities
   - The Spelling Bee
   - The Old Stove
   - Class Picture



Note. From the Bennett Environmental Education Centre, Edmonton, Alberta.
Reduced in size - 75%

GIRLS

Hair - braids, ringlets, or
buns for long hair
- ribbons, bows or combs
- wide brimmed hats with
ribbons (or, even a bonnet)

Dresses - with wide skirts that stop
between knees and ankles

OR - wide skirt with white frilly
blouse
- scarf or ribbon tied at neck
in a bow

OR - wide white collar (could be
made of paper)

OR - full-length apron over dress.

Stockings - dark, perhaps brown or black leotards

Shoes - dark with buckles or laces
- OR, a plain slipper, possibly with a bow lightly stitched
on for effect.
- OR, a low-type contrasting sock over the longer stocking
would do fine!

BOYS

Shirts - long-sleeved
- buttoned to the top
- plaid or flannel in dark,
soft colors
OR white, possibly with a bow tie
OR shirt with sailor-type collar (wide collar/open)

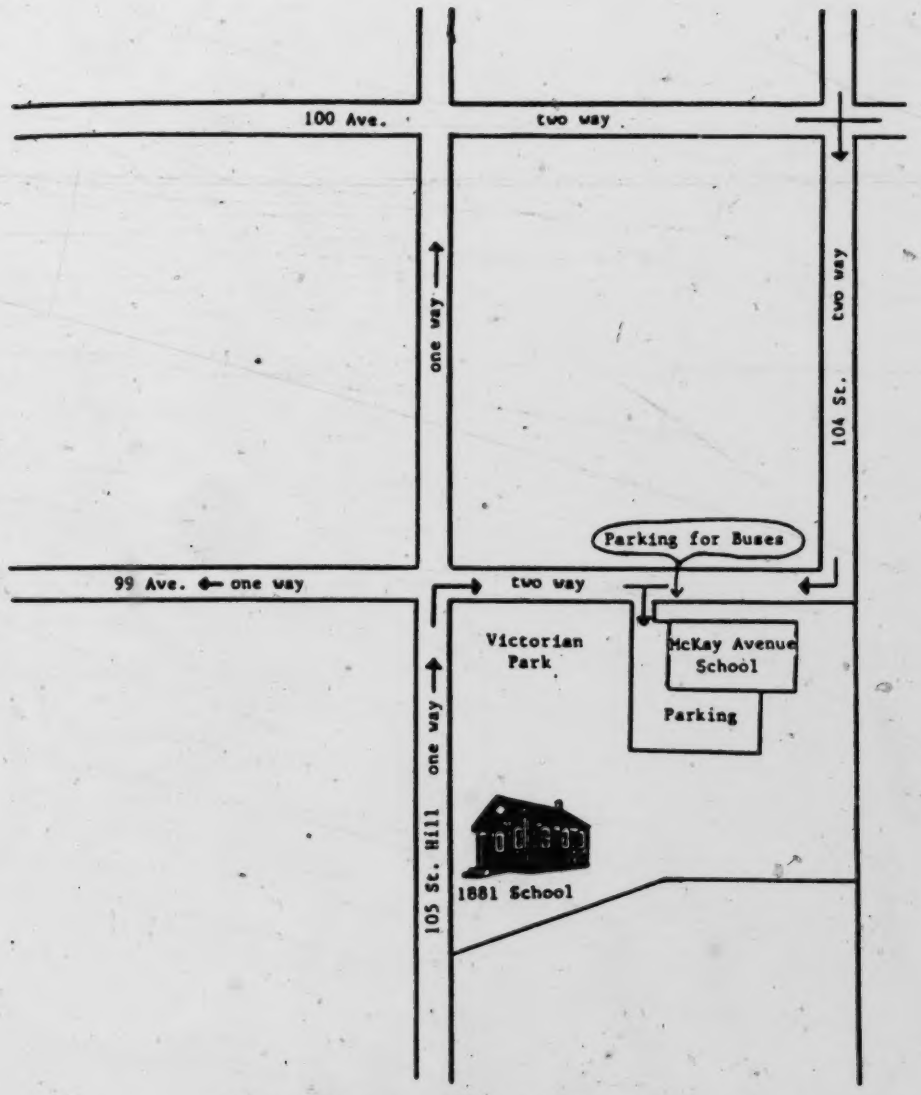
Jackets or Sweaters - dark colors
- ill-fitting

Trousers - slacks or jeans in dark, plain colors
- tucked into socks to look like knickers (breeches)
- suspenders or home-made suspender-type straps

Socks - heavy wool socks, preferably long to cover
up trouser legs (dark solid colors are best)

Shoes - lace-up work boots
- OR moccasins for moccasin-type footwear
- OR improvise using an old pair of socks cut off
with the bottom open and overlapping the top of
a shoe like a spat.

Note. From the Bennett Environmental Education Centre, Edmonton, Alberta.
Reduced in size - 75%



ROUTE MAP - TO 1881 SCHOOLHOUSE

McKay Avenue School - 10425 - 99 Ave.

Note. From the Bennett Environmental Education Centre, Edmonton, Alberta.
Reduced in size - 75%

SCHOOL CLASS GUEST BOOK

For the

-- 1881 SCHOOLHOUSE --

DATE VISITED: _____ HOME SCHOOL: _____

SCHOOL ADDRESS: _____

Students, Teacher(s) and Parents are requested to sign their names (Actual Signatures) as an Historical Record of this visit.

Teacher(s): _____ _____

_____ _____

Students:

(1) _____ (19) _____

(2) _____ (20) _____

(3) _____ (21) _____

(4) _____ (22) _____

(5) _____ (23) _____

(6) _____ (24) _____

(7) _____ (25) _____

(8) _____ (26) _____

(9) _____ (27) _____

(10) _____ (28) _____

(11) _____ (29) _____

(12) _____ (30) _____

(13) _____ (31) _____

(14) _____ (32) _____

(15) _____ (33) _____

(16) _____ (34) _____

(17) _____ (35) _____

(18) _____ (36) _____

Parents: _____ _____

_____ _____

THIS COMPLETED DOCUMENT TO BE PRESENTED TO THE 1881 TEACHER ON ARRIVAL AT THE SCHOOLHOUSE.

Note. From the Bennett Environmental Education Centre, Edmonton, Alberta.
Reduced in size - 75%

APPENDIX C

Description of Agency

Welcome to the Edmonton (1881) School, the first free public school established in the Alberta District of the Northwest Territories.

This little schoolhouse was built for the residents of the Edmonton settlement by the firm of Oliver and McDonald for the tendered price of $968. It opened for instruction on January 3, 1882. From 1882 to 1885 the costs of school operation were borne by local residents through public subscriptions. As well, a small Northwest territorial grant was received to pay part of the teacher's salary. In 1885, the school district was incorporated as a legal entity and school taxes were levied a year later.

Prominent in the establishment of the first school were trustees Matthew McCauley, Malcolm Groat and William Rowland.

The Hudson's Bay Company was approached to donate lots on the top of the hill where the present McKay Avenue School stands, with the promise that the cost of erecting the schoolhouse would be borne by residents of the settlement.

Note. From the Bennett Environmental Education Centre, Edmonton, Alberta.

The first tender for the public school, which appeared in the local EDMONTON BULLETIN, listed only the minimum requirements for the building:

Tenders will be received by the Edmonton School Trustees up to Wednesday, the 2nd of October, for the erection of a frame school house 24 X 30 feet, on the school property. Lots 81, 82, 83, 84, Range 4. Plans and specifications may be seen at the house of Mr. M. McCauley.

W. Rowland
M. McCauley
M Groat
School Trustees

In addition to the specifications in the advertisement, the new schoolhouse was to have a porch. As well, a "double inch" floor with upper layer "dressed" was required. The inside and outside walls and the 10-foot-

Note. From the Bennett Environmental Education Centre, Edmonton, Alberta.

ceiling were also to be constructed of dressed lumber. Outside walls were to be battened and the wall cavities were to be filled with sawdust, "well rammed down." Roof shingles were to be laid over tarpaper and the building was to have a brick chimney.

Specifications also called for a double front door and eight windows to be fitted with the largest panes of glass ever seen in the settlement. Only the front door and window frames were to be painted.

Other details of the tender called for 12 pupils' desks and accompanying seating forms or benches, each four feet long. An 18-inch-wide platform across the west end of the schoolroom was also specified. The successful bidder was required to fit the new school with a teacher's desk and a blackboard 4' X 23'. The deadline for completion of Edmonton's first frame lumber building was January 1, 1882.

The first Edmonton school served the children and residents of the settlement for over 20 years before being sold to private interests. Shortly before World War I it was moved to the Rossdale Flats where it was converted into a private residence. For over 60 years the little school served as the home of the Mawhinney family.

Note. From the Bennett Environmental Education Centre, Edmonton, Alberta.

In 1980, the City of Edmonton purchased the property, and in 1982 sold it to the Edmonton Public School Board for the sum of one dollar.

The 1881 Schoolhouse Today

As a major centennial project, restoration of the little school commenced on January 15, 1982. One of the most difficult aspects of the restoration process was the elevation of the little school so that it could be securely undergirded with construction timbers. Another was the removal of much of the siding which had suffered the ravages of the 1915 flood.

A more interesting restoration detail was the removal of wallpaper - all 26 layers - which had been pasted onto the walls. After all the wallpaper had been carefully removed, it was discovered that the original walls had been plastered over rough interior sheeting. Apparently, the original specifications of a "dressed" lumber wall had been changed.

Six months later, under the skillful direction of Clerk of Works J. M. Weinberger and Assistant Superintendent D. Wright, the

Note. From the Bennett Environmental Education Centre, Edmonton, Alberta.

little school was restored and moved back to the McKay Avenue schoolgrounds, just 100 meters from where it was first sited. Some of the exterior and most of the interior of the building have been restored using the original materials. The brick chimney, front double doors, and hinges are also original. So is the front porch which is constructed of 1881 lumber.

Within the schoolroom, all the woodwork, except the floor, is original. The blackboard ledge, wainscotting and all wood trim is of materials first used in the 1881 structure. The 18" blackboard platform is reconstructed utilizing 1881 materials, and one window frame (south-west corner) contains window glass that is at least 80 years old.

Even some of the flaws of the old building have been faithfully restored. Note particularly the bow in the wall onto which the blackboard has been attached.

As you walk around the building, please direct your attention to the sturdy iron hook attached to the outer west wall. This was one of the supports to which rope and wire were tied so that the school could be firmly anchored when the North Saskatchewan River flooded its banks in 1915.

Note. From the Bennett Environmental Education Centre, Edmonton, Alberta.

Thank you for visiting Edmonton's first school, which today is a birthday gift to the children of the Edmonton Public Schools.

Note. From the Bennett Environmental Education Centre, Edmonton, Alberta.

APPENDIX D

Class Photographs (1882, 1888).

Note. Photograph from: Provincial Archives of Alberta
E. Brown Collection
B 3894
Title - Edmonton's first school built in 1881. Mr. Joe Carson teacher.

Note. Photograph from: Provincial Archives of Alberta
E. Brown Collection
B 3888
Title - Edmonton Public School shows first teacher William Cameron and first school trustees. 1887.

APPENDIX E

Research Form to Document Children's Clothing

RESEARCHING CHILDREN'S GARMENTS

1. Date _____

2. Museum _____

City _____

Contact Person(s) _____

3. Garment Accession Number _____

4. Garment Location Number _____

5. Donor _____

Donor's Address _____

6. Documentation Report _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

7. Existing photographs of original wearer? _____

Copies made? _____

8. Condition of garment _____

_____

Suitable for exhibit purposes? _____

9. Period of garment _____

Basis of date - donor information _____
researchers estimate _____
curators estimate (specify who) _____
additional comments _____

_____

_____

_____

_____

10. Description of Garment

a. Name of Garment _____

b. Basic Style _____ Sketch

c. Fabric Colour _____

Fiber Content _____
Basis - Microscopic Analysis? _____
Observation (by who)? _____
Other _____

Yarn Structure (twist) _____

Fabric Structure
Woven _____ Knotted _____
Knit _____ Tatted _____
Crochet _____
Other _____

Fabric Print _____

Thread Count _____

Hand _____

d. Lining Colour _____

Lining Fiber Content _____

Lining Weave _____

Lining Print _____

e. Stabilizing Fabrics Used _____

11. Seams Used	Type	Size
a. Shoulder Seam		
b. Bodice Shaping		
c. Side Seam		
d. Neck		
e. Waist		
f. Armhole		
g. Sleeve		
h. Leg		

12. Hems Used	Type	Size
a. Sleeve		
b. Lower edge		
c. Leg		

13. Facings Used

14. Types of closures

	Technique	size	location	sketch
a.				
b.				
c.				

15. Embellishment / Decorative Techniques

Description	Sketch

16. Pieces Making Up The Garment

17. Related Sources (similar garment or illustration)
(indicate the similarities and differences)

Historic Magazine Illustration_____
Artifact_____
Secondary Source Illustration_____

Other_____

18. Does the museum have photographs of the artifact? _____
    Were copies purchased? _____
    Were the photos Xeroxed? _____

19. Photographed by Researcher? _____

Film # _____	Exposure # _____	Detail _____
Film # _____	Exposure # _____	Detail _____
Film # _____	Exposure # _____	Detail _____
Film # _____	Exposure # _____	Detail _____
Film # _____	Exposure # _____	Detail _____
Film # _____	Exposure # _____	Detail _____
Film # _____	Exposure # _____	Detail _____
Film # _____	Exposure # _____	Detail _____
Film # _____	Exposure # _____	Detail _____
Film # _____	Exposure # _____	Detail _____

20. Additional Comments

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

21. Contact Prints

Note. Modified from a research form developed by Janice Smith, Curatorial Technician, Clothing and Textiles Department, University of Alberta.

APPENDIX F

Reproduction Costuming

REPRODUCTION COSTUMING
Edmonton 1881 Schoolhouse

THE PROCESS

Costume research

Costume styles for the Edmonton 1881 Schoolhouse were derived from the following sources:

1. Children's clothing housed within museums and costume collections:
   - University of Alberta Historic Costume and Textile Study Collection - Edmonton
   - Glenbow Museum - Calgary
   - Provincial Museum of Alberta - Edmonton
   - Vancouver Museum - Vancouver
   - British Columbia Provincial Museum - Victoria
   - Manitoba Museum of Man and Nature - Winnipeg
   - Royal Ontario Museum - Toronto
   - McCord Museum - Montreal
   - Ivan Sayers Private Collection - Vancouver
   - Joyce McGuire's Baby Collection - Vancouver
   - Dugald Costume Collection - Dugald
- patterns were drafted for most 1880's children's clothing observed.

Strengths:
- garments have three-dimensional shape from which pattern cut can be taken.
- garments indicate fabrics which were available at that time.
- garments provide a clear indication of construction techniques used.
- garments show the notions used.
- period handwork techniques such as knitting, crocheting, and embroidery can be identified and reproduced.

Limitations:
- most children's clothing housed within collections were intended for best dress and are generally for preschool age children, especially infants. Consequently, the style and fabric used may not have been suitable for school wear.
- certain types of garments are scarce (e.g., underwear, especially boys').

2. Quilts and adults' clothing

Strengths:
- quilts and adults' clothing indicate other fabrics which were available in the 1880's.

Limitations:
- no evidence is given to indicate if the fabrics available would have been used for children's clothing.

3. Photographs housed within archives and photograph collections.
   - University of Alberta Historic Costume and Textile Study collection - Edmonton
   - Glenbow Archives - Calgary
   - Provincial Archives of Alberta - Edmonton
   - Edmonton City Archives - Edmonton
   - Vancouver Archives - Vancouver
   - British Columbia Provincial Archives - Victoria
   - Manitoba Provincial Archives - Winnipeg
   - Western Development Pictorial Index - Winnipeg
   - Notman Photograph Collection - Montreal
   - Public Archives of Canada - Ottawa
   - Society for the Retired and Semi-Retired, photograph collection - Edmonton
   - Privately owned photographs
   - Published photographs

- Clothing styles worn by school children were noted from school photographs.
- Styles evident in other casual and professional photographs were also identified.

Strengths:
- school photographs provide an image of clothing styles which students may have worn to school.
- Professional photographs help to indicate the range of styles available during a specific era and tend to present a closer, more detailed image of the clothing worn.

Limitations:
- Students posing for school photographs may have worn their best dress in anticipation of the photograph.
- Children appearing in professional photographs tend to wear their best dress.
- The photographs from the 1880's are black and white so no idea of fabric colour can be obtained.
- The ability to identify garment styles is dependent on clarity of the photograph.
- Indications of underclothing are rarely obtained.

4. Copies of fashion plates housed within archives

- Style lines were noted from illustrations presented on fashion plates.

Strengths:
- Fashion plates indicate fashionable clothing styles during a specific era.

Limitations:
- Illustrations are representative of fashionable dress rather than clothing which would have been worn to school.

5. Periodicals and catalogues housed within museums and archives, reprinted into a bound format or copied onto microfilm

Eaton's Catalogue.....U of A library
E. Butterick & Co. Catalogue.....Parks Canada
Godey's Ladies Book.....U of A Library
Jordan Marsh & Co. Catalogue.....Parks Canada
Ladies Home Journal.....U of A Library
Ladies Journal.....U of A Library
Lord & Taylor Catalogue (1881)(reprint)U of A Library
Peterson's Magazine.....U of A Library
The Delineator.....Parks Canada
The Gentleman's Magazine of Fashion.....Parks Canada

- Periodicals and catalogues were examined to determine clothing styles which were popular for children during the 1880's. Descriptions provided suggestions for dressing children in general and school children in specific.

Strengths
- Catalogues and periodicals provide an indication of styles which were popular during a specific era.
- Reference is given regarding fabrics and colours which were popular.

Limitations
- Catalogues and periodicals indicate the clothing styles which were appropriate for school use, but do not indicate if they actually would have been worn to school.
- To understand written descriptions of garment styles and fabric colours, terminology from that time period must be understood.

5. Cutting guides

Thompson, B. (1887). Thompson's Garment Cutter. Kansas City: Ramsey, Millet & Hudson, Printers, Etc.

- Cutting guides were used to draft patterns for simple style lines.

Strengths
- Cutting guides provide an indication of basic garment cut used during a specific time period.

Limitations
- Garment cut from period cutting manuals may not fit a modern-day figure.
- The garment cutter used did not indicate trims which would have been used to decorate clothing styles.

6. Biographic Data

McClung, N. (1965). Clearing in the west. Toronto: Thomas Allen & Son.

- Clothing references were taken from biographic information.

Strengths:
- Basic styles and fabrics can be identified through written descriptions.
- References to clothing worn by various social status groups for specific occasions can be found.
- Textile use and attitudes of the person wearing them can be determined.

Limitations:
- Understanding of garment styles and fabric types is dependent on the writer's ability to convey this message. This information could be affected by the writer's perception.

7. Secondary Sources:

Ackerman, E. (1984). Dressed for the country: 1860-1900. Los Angeles: Los Angeles County Museum of Art.

American Mail order fashions 1880-1900. (1961). Scotia, N.Y.: American Review.

Bradfield, N. (1968). Costume in detail. Boston: Plays.

Brooke, I. (1930). English children's costume since 1775. London: A & C Black.

Buck, A. M. (1961). Victorian costume and costume accessories. New York: Thomas Nelson & Sons.

Caulfeild, S. F. A. (1972). Encyclopedia of Victorian needlework. New York: Dover Publications.

Collard, E. (1973). From toddler to teens: An outline of children's clothing circa 1780 - 1930. Burlington, Ontario: Eileen Collard.

Cunnington, P., & Buck, A. (1965). Children's costume in England 1300-1900. London: Adam & Charles Black

Ewing, E. (1977). History of children's costume. London: B. T. Batsford.

Lansdell, A. (1985). History in Canada fashion a la carte 1860-1900. Princes Risborough, Aylesbury, Bucks: Shire Publications.

Late Victorian needlework for Victorian houses. (1979). New York: Watkins Glen.

Levitt, S. (1986). Victorians unbuttoned - Registered designs for clothing, their makers and wearers, 1839 - 1900. London: George Allen & Unwin.

Martin, L. (1978). The way we wore - Fashion illustrations of children's wear 1870-1970. New York: Charles Scribner's Sons.

Niles, E. M. (1885). Fancy work recreations. Minneapolis: Buckeye Publishing Co.

Page, C. (1981). Foundations of fashion - The Symington collection - Corsetry from 1856 to the present day. New Walk, Leicester: Leicester Museums Publication 25

- Secondary sources were examined to identify basic style lines and specific clothing items (e.g., underclothing).

Strengths:
- Secondary sources may provide information compiled on one specific era or garment type (e.g., underclothing).
- They provide a broad overview useful in the introductory stages of research.

Limitations:

- Illustrations and written material are selectively chosen and limited by the message which the author wishes to convey and by the writers' perceptions.

Construction Process

- The sources were compiled to obtain a selection of children's clothing representative of those which would have been worn to an Edmonton schoolhouse during the 1880's. Patterns were then prepared for each item of clothing from one of the following procedures:

1. Patterns drafted from original garments, graded to fit a Grade 3 student and used in their original form.

2. Patterns drafted from original garments, graded to fit a Grade 3 student and modified to more closely approximate clothing styles evident in school photographs.

3. Patterns drafted from Thompson's Garment Cutter and the Gentleman's Magazine with details added to approximate clothing styles evident in school photographs.

4. Patterns drafted from a pattern block sized to fit a Grade 3 student based on garment cut taken from original clothing.

5. Patterns copied from original patterns presented by pattern companies and periodicals.

- Each garment was sewn from muslin to check the style line, construction and fit.

- Modifications were made to patterns as needed.

- Fabric was chosen for each garment based on the research conducted earlier. Fabrics needed to meet the following criteria:
  - only natural fibers were used.
  - colours needed to be representative of those used for school clothing from the 1880's.
  - fabrics needed to be visually representative of those used for school clothing from the 1880's.

- Notions were chosen for each garment. When possible, notions were selected from authentic materials (mother of pearl buttons, cloth covered waist buttons). Limitations in the availability of appropriate notions necessitated a sacrifice to authenticity (bone like buttons were used instead of actual bone buttons).

- Construction details for each garment were limited to those used in the 1880's. Only the straight stitch was used. Gauging was done by hand, as were all buttonholes. Seams were either bound, french, flat-felled or hand-overcast.

- Accessories were knitted or crocheted from period patterns (lace collars, some knitted socks) or purchased (95% cotton socks and 80% wool socks)

- Trims were hand prepared from period patterns or purchased from 100% cotton trims which closely resembled the original.

- Boots were made from old skates which had the blades removed and were dyed black.

THE PRODUCT

Boys' wear

Standard
(all boys):
- Drawers
- Boy's shirt
- Boy's breeches
- Suspenders
- Stockings
- Lace up boots (when size was available) *

Style Variations
- Stocking Supports - some boys
- Cutaway jacket
- Straight cut jacket with peter pan collar
- Straight cut jacket with notch collar
- Norfolk jacket
- Sailor suit
- pockets variations - patch, welt, flap
- lower front edge variations - straight, notched

Girls' wear

Standard
(all girls):
- Drawers (2 styles) or combinations
- Waist with wrap around ties
- Chemise
- Full or half petticoat (2 styles)
- Stockings
- Lace up boots (when size was available) *

Style Variations

- Blouse and pleated skirt
- Polonaise and skirt
- Dress with pleated center front panel
- Dress with gauged center front panel
- Dress with v shaped revers and gauged center front panel
- Straight cut dress with pleated lower edge
- Straight cut dress with ruffled lower edge and ruffled collar
- Dress with gathered blouse waist stitched to a front and back neck yoke. Waist at normal position or dropped.
- Dress with gauged skirt and ruffles at the neck and hem edge.

* Note - In some of the classes, a few students were unable to fit the boots assigned to them or the spare boots provided. They wore their regular footwear.

APPENDIX G

Line-drawn Illustrations of Costume Styles

GIRLS' COSTUMES

Girl 1

Girl 2

Girl 3

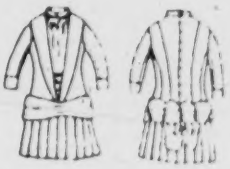
Girl 4

Girl 5

Girl 6

Girl 7

Girl 8



Girl 9

Girl 10

Girl 11

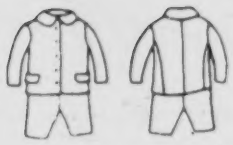
Girl 12

Girl 13

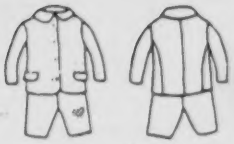
Girl 14

Girl 15

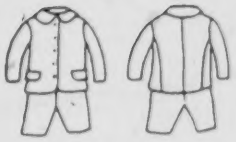
BOYS' COSTUMES



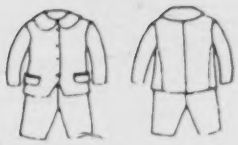
Boy 1



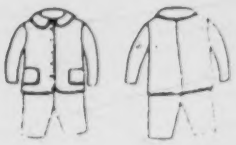
Boy 2



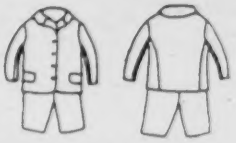
Boy 3



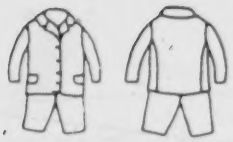
Boy 4



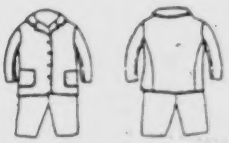
Boy 5



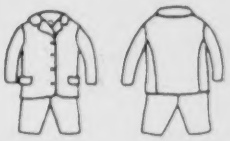
Boy 6



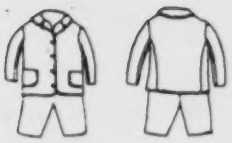
Boy 7



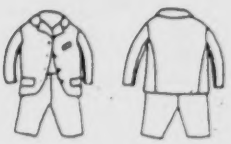
Boy 8



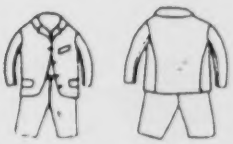
Boy 9



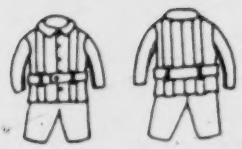
Boy 10



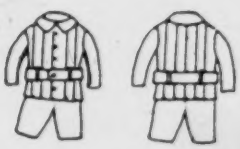
Boy 11



Boy 12



Boy 13



Boy 14

Boy 15

APPENDIX H

Photograph of Children Dressed in Reproduction Costumes

Note. Photo taken June 10, 1988 in front of the Edmonton Public Schools Archives and Museum 1881 Schoolhouse.

APPENDIX I

1881 Schoolhouse Objectives

PROGRAM OBJECTIVES

Program Specific

The objectives for the 1881 schoolhouse stress the affective domain. Students should leave the program with an interest and enthusiasm for school life and related history from the 1880's. The school's aim is to place children in an atmosphere which closely approximates that from the past, so students can gain an appreciation of what it felt like to be a child at that moment in history. Burt Demeriez from the Bennett Environmental Education Centre notes that children go to the 1881 schoolhouse, not to watch a class, but to become a class. In this way, they are involved in a role play situation, in which, the structure is imposed by the setting, materials, and instructor.

Cognitive objectives were aimed at teaching children about the subjects which were taught, discipline techniques, moral education, and historic circumstances affecting school life in the 1880's.

The objectives for the educational program conducted at the Edmonton 1881 Schoolhouse were stated by Burt Demeriez, program coordinator for the Bennett Environmental Education Centre. These were written as behavioural objectives and presented to him for verification. Costume oriented objectives were devised by the researcher.

The purpose and objectives of the 1881 schoolhouse are as follows:

Purpose

"The 1881 schoolhouse was restored and reopened in 1982 to provide present day students with an opportunity to experience the nature and content of schooling as it was a century ago" (B. Demeriez, personal communication, 1987).

Objectives

- to inform students about subjects which were taught in Edmonton's 1881 public school.

- to show students the techniques used to teach subjects from the 1880's.

- to inform students about the importance of the British Empire to life in 1881.

- to teach students about the meaning of patriotism and morality of the Victorian era.

- to show students the importance of patriotism to the British Empire, as was reflected by children's education.

- to have students experience the use of slates within lesson activities.

-to inform students of various games and activities which were carried out during recess and to provide them with an opportunity to participate in some of these activities.

- to inform students about health inspections which were done on a regular basis in classrooms of the early 1880's and to provide them with an opportunity to experience a health inspection.

- to teach students about the historic background of the school, including early teachers, board members, students and the building of early schools through the use of visual props.

- to increase student awareness of various 1881 schoolhouse authentic features, including the blackboard, wood panelling, windows, doors and a typical stove of the time.

- to provide students with an opportunity to experience the discipline of classroom learning in the 1880's.

- to provide students with an opportunity to behave and dress in a manner which closely approximates that of the 1880's.

- to provide students with an opportunity to participate in a role play situation where they become students in the 1880's.

- to provide students with an opportunity to sit in an historic school room and use historic materials to feel what it was like to be a student in the 1880's.

Behavioural objectives

The program objectives laid out by the Bennet Environmental Education Centre above served as a basis for drawing up a set of behavioural objectives. Identifying behavioural objectives is a necessary prerequisite to insure that the program effectiveness can be measured in terms of how well these objectives are met.

The behavioural objectives were subdivided into cognitive and affective domains as follows:

Cognitive

The Student will be able to:

-identify subjects which were taught in Edmonton's 1881 public school.

-recognize a moral standard of behaviour through readings from Victorian era stories or books.

-identify slates and slate pencils as being the writing material of students in 1881.

-identify various games and activities which students may have played during recess.

-recognize authentic aspects of the 1881 school building such as the blackboard, wall panelling, window frames and doorways.

-identify the heating system of the 1881 schoolhouse as being a wood burning stove.

-understand the meaning of the word "patriotism".

-know that Edmonton was a small village within the Northwest Territories and under the rule of the British Empire.

-identify the flag which Edmonton would have had in 1881 and the reason for that flag.

-understand a health inspection and indicate the types of activities which would comprise a health inspection.

Affective

The student will be able to:

- note that he or she feels like a student from the 1880's.

- note that he or she enjoys participating in the 1881 school program.

Costume Specific

Cognitive

The student will be able to:

-select clothing styles worn by school age girls in the 1880's from a set of line-drawings illustrating girls' clothing.

-select clothing styles worn by school age boys in the 1880's from a set of line-drawings illustrating boys' clothing.

-indicate if photographs of school age children were taken in the 1880's.

Affective

The student will be able to:

-indicate that his or her enjoyment of costume was increased by having the opportunity to wear reproduction costumes.

- indicate that his or her enjoyment of history was increased by having the opportunity to wear reproduction costumes.

-indicate that costumes helped him or her to feel like a student from the 1880's.

APPENDIX J

Letter to Control and Experimental Groups

Becky Dahl
Room 125
Home Economics Building
University of Alberta
Edmonton, Alberta
T6G 2M8

Name of school

Dear Name of principal,

I am currently involved in a research project to evaluate the effectiveness of programming conducted at the Edmonton 1881 Schoolhouse. Classes have been selected from those that booked tours to the 1881 schoolhouse through the Bennett Environmental Education Centre. The Grade 3 class, under the instruction of Name of teacher has been chosen to participate in this study.

We request your permission to allow the Grade 3 class scheduled to attend the 1881 schoolhouse program on Date to participate in this study.

Research for this evaluation will involve the following measurements:

a) a written questionnaire to be completed by students on the day of the field trip (time - about 15 minutes) (location - Name of school)

b) a written questionnaire to be completed by the classroom teacher two weeks after the field trip (time - about 15 minutes) (location - Name of school)

c) an oral interview with five randomly selected students from the class two weeks after the field trip (time - about 5 minutes for each student) (location - Name of school)

Additional directions will be provided, should you agree to participate in this study. Enclosed, you will find a consent form to be filled in by yourself and and the cooperating teacher. It is suggested that you discuss this with the teacher and fill in the consent form if you decide to participate in this study. I have also included letters which may be sent to parents. The consent form and the parent forms may be returned to the Edmonton Public Schools Archives and Museum c/o Becky Dahl or to the return address given above. If you have any questions, please contact Becky Dahl (436-7631 / 432-5385). Thank you.

Yours Sincerely,

Becky Dahl,
(Graduate Student
University of Alberta)

APPENDIX K

Control and Experimental Groups' Consent Form

Consent Form
(School name)

A Grade 3 class from your school has been scheduled to attend the 1881 schoolhouse educational program. A researcher, in an effort to evaluate programming conducted at the site, requests your permission to allow students from this group to participate in the study. If you agree to participate in this study, please sign this consent form and mail it to the researcher.

I agree to permit the Grade 3 students scheduled to attend the 1881 schoolhouse to participate in the study evaluating the effectiveness of programming conducted at the Edmonton Public Schools Archives and Museum 1881 Schoolhouse. I am aware that a researcher will present students with a written questionnaire to be completed on the same day as the field trip, shortly after lunch break. Two weeks following the field trip, the researcher will ask five students randomly selected from the class to answer an oral question taking approximately five minutes. An audio cassette will be used to record student responses. I am also aware that student names and the school name will be kept confidential and that the students are free to withdraw from this study at any time.

_____
signature
(principal)

I agree to permit the Grade 3 students scheduled to attend the 1881 schoolhouse to participate in the study evaluating the effectiveness of programming conducted at the Edmonton Public Schools Archives and Museum 1881 Schoolhouse. I am aware that a researcher will present students with a written questionnaire to be completed on the same day as the field trip, shortly after lunch break. I am also aware that five students from the class will be asked to respond to an oral question (taped on an audio cassette) taking approximately five minutes, two weeks following the field trip experience. I also agree to complete a written questionnaire which will be given to me two weeks following the field trip experience. I am aware that both the students and I are free to withdraw from this study at any time.

_____
signature
(teacher)

** A summary of results will be available on request.

APPENDIX L

Parent Consent Form

Dear Parent,

RE: field trip to the Edmonton 1881 Schoolhouse

As you are aware, Grade 3 students from your child's school are scheduled to attend the 1881 schoolhouse. I am conducting a research project to evaluate programming conducted at this site. As part of this project, I would like to request your permission to allow your child to answer some questions regarding the field trip experience. If you agree, please fill in the information requested below and sign your name. The completed form may be sent back to the school with your child. Thank you.

Yours Sincerely,

Becky Dahl
(Graduate Student,
University of Alberta)

****

School Name _____

Student's Name _____

Parent's Signature _____

APPENDIX M

Letter to Previsit Group

Room 125
Home Economics Building
University of Alberta
Edmonton, Alberta
T6G 2M8

Name of school

Dear Name of principal

I am currently involved in a research project to evaluate the effectiveness of programming conducted at the Edmonton 1881 schoolhouse. Classes have been selected from those that booked tours to the 1881 schoolhouse through the Bennett Environmental Education Centre. The Grade 3 class, under the instruction of Name of teacher has been chosen to participate in this study.

We request your permission to allow the Grade 3 class scheduled to attend the 1881 schoolhouse program on Date to participate in this study. Students from this class have been assigned to a pretest group. As such, they would be requested to complete a written questionnaire prior to their visit to the schoolhouse. This will take approximately 15 minutes to complete. A researcher will contact you at a later date, should you agree to participate in this study, and arrange a time when this questionnaire could be administered.

Enclosed, you will find a consent form to be filled in by yourself and the cooperating teacher. It is suggested that you discuss this with the teacher and fill in the consent form if you decide to participate in this study. I have also included letters which may be sent to parents. The consent form and the parent forms may be returned to the Edmonton Public Schools Archives and Museum c/o Becky Dahl or to the return address given above. If you have any questions, please contact Becky Dahl, (436-7631 / 432-5385). Thank you.

Yours Sincerely,

Becky Dahl
(Graduate Student
University of Alberta)

APPENDIX N

Previsit Group Consent Form

CONSENT FORM
(School name)

A Grade 3 class from your school has been scheduled to attend the 1881 schoolhouse educational program. A researcher, in an effort to evaluate programming conducted at that site, requests your permission to allow students from this group to complete a pretest prior to their visit. Information from this group will help reveal student attitudes and knowledge prior to their visit to the 1881 schoolhouse. If you agree to participate in this study, please sign this consent form and mail it to the researcher.

I agree to permit the Grade 3 students scheduled to attend the 1881 schoolhouse to participate in the study evaluating the effectiveness of programming conducted at the Edmonton Public Schools Archives and Museum 1881 Schoolhouse.. I am aware that a researcher will come to this school and present students with a written questionnaire to be completed prior to their field trip. I am also aware that the students may withdraw from this study at any time should they request to do so.

_____
signature (principal)

_____
signature (teacher)

** A summary of results will be available on request.

APPENDIX O

Letter to Control Group

Becky Dahl
Room 125
Home Economics Building
University of Alberta
Edmonton, Alberta
T6G 2M8

Dear Name of teacher

RE: Field trip to the Edmonton 1881 Schoolhouse
scheduled for Date

Thank you for offering to participate in the study to evaluate the educational program conducted at the Edmonton 1881 Schoolhouse.

As this is a controlled experiment, it is requested that you wear your everyday clothing (not historical costumes). In addition, parents are asked to wear their everyday clothing. This helps to insure that parent and teacher dress is kept constant. A letter to parents who plan to attend the school program has been included with this letter. This letter may be sent to the parents who will attend the school program, or you may wish to discuss this with them informally. As indicated in the Bennett Environmental Education Centre information sheet, children may come dressed in costume (see p. 2). For those students who plan to wear costumes, it is requested that they bring them to your school and get changed on the morning of the field trip. This is also to insure experimental control.

The research project will involve the following activities:

Date.....(one day before your field trip) - A researcher will telephone you to arrange a time when the questionnaire could be given to students.

Date.....(date of the field trip) - Your class will attend the 1881 schoolhouse program as normal. Shortly after lunch, the researcher will come to your school and present students with a

questionnaire lasting about 15 minutes. Each questionnaire has been given a code number for identification purposes. Student names will not be requested, to insure anonymity of subjects.

Date.....(two weeks after the field trip) - The researcher will return to your school and present five randomly selected students from your class with an interview question to be answered orally. Students may decline to participate if they desire. The time required for each interview will be about five minutes. You will also be given a written questionnaire regarding the field trip experience to be completed at this time.

This will conclude the evaluation procedure, as requested by this study. A summary of the results will be made available, following the evaluation, should you request a copy. Thank you for your assistance with this study.

Yours Sincerely,

Becky Dahl
(Graduate Student
University of Alberta)

APPENDIX P

Letter to Experimental Group

Becky Dahl
Room 125
Home Economics Building
University of Alberta
Edmonton, Alberta
T6G 2M8

Dear Name of teacher

RE: Field trip to the Edmonton 1881 Schoolhouse
scheduled for Date

Thank you for offering to participate in the study to evaluate the educational program conducted at the Edmonton 1881 Schoolhouse.

As this is a controlled experiment, it is requested that you wear your everyday clothing (not an historical costume). In addition, parents are asked to wear their everyday clothing. This helps to insure that parent and teacher dress is kept constant. A letter to parents who plan to attend the school program has been included with this letter. This letter may be sent to the parents who will attend the school program, or you may wish to discuss this with them informally. For this study, costumes will be provided for students to wear. Enclosed with this letter is an information sheet which briefly describes the costumes which students will receive and explains how students should get dressed. The sizing sheet included with this letter should be filled out and returned to the researcher immediately. It is suggested that the costumes be tried on by students prior to the scheduled field trip date. This will insure that costumes fit and will introduce children to the costumes.

The research project will involve the following activities:

Date.....(one day before your field trip) A set of costumes will be delivered to your school for students to wear. It is requested that these costumes remain in your school and that students get dressed there on the morning of the field trip. When students return

to the school, they can be asked to change into their regular clothing and return the reproduction costumes to the garment bags provided. A researcher will also ask you about a time when the questionnaire can be given to students.

Date.....(date of the field trip) Your class will attend the program and return to your school as normal. Shortly after lunch, the researcher will come to your school and present students with a questionnaire lasting about 15 minutes. Each questionnaire has been given a code number for identification purposes. Student names will not be requested, to insure anonymity of subjects.

Date.....(two weeks after the field trip) The researcher will return to your school and present 5 randomly selected students from your class with an interview question to be answered orally. Students may decline to participate if they desire. The time required for each interview will be about 5 minutes. You will also be given a written questionnaire regarding the field trip experience to be completed at this time.

This will conclude the evaluation procedure as requested by this study. A summary of the results will be made available, following the evaluation, should you request a copy. Thank you for your assistance with this study.

Yours Sincerely,

Becky Dahl
(Graduate Student
University of Alberta)

APPENDIX Q

Letter to Parents

Letter to parents attending the
Edmonton 1881 Schoolhouse Educational Program

Dear Sir or Madam,
RE: field trip to the Edmonton 1881 Schoolhouse.

As you are aware, Grade 3 students from Name of school are scheduled to attend the 1881 schoolhouse on Date. A program evaluation will be conducted on that day. To insure that parents attending the school are dressed in a similar fashion, we request that you wear your everyday clothing. Historic costumes worn by parents could affect the results of this study. A summary of the evaluation results will be sent to the school following the study, should you wish to see them.

It is hoped that results from this research project will help to improve programming conducted at the 1881 schoolhouse so student understanding and appreciation of the past will be enhanced.

Thank you for your
cooperation in this matter

Yours Sincerely,

Becky Dahl
(Graduate Student
University of Alberta)

APPENDIX R

Teacher Costume Instructions

COSTUME INSTRUCTIONS

This handout is intended to familiarize you with the 1880's reproduction costumes which your class will receive for their field trip to the Edmonton 1881 Schoolhouse.

BOYS

Boys will each receive the following items of clothing, which are to be put on in the order given. Illustrations for each item of clothing can be obtained from the laminated instruction sheet sent with each costume.

1. Drawers

2. Stockings

3. Stocking supports (optional) - these get slipped on just over the top of each stocking.

4. Shirt

5. Breeches (pants)

6. Suspenders - these get buttoned to the breeches.

7. Jacket - note that some boys will receive cut-away jackets. Only the top button of these jackets will get done up.

8. Boots

GIRLS

Girls will each receive the following items of clothing, which are to be put on in the order given. Illustrations for each item of clothing can be obtained from the laminated instruction sheet sent with each costume.

1. Chemise - the drawstring around the neck gets tied at the front.

2. Waist - this corded waist has long ties which wrap around the back. One tie end slips through a hole on the other side and they are tied at the front.

3. Drawers - students will receive one of two types. One style has a waistband, which gets buttoned to the waist. The second type has a drawstring waist.

4. Petticoat - students will receive one of two types. One style has a waistband, which gets buttoned at the back. The second type has a drawstring which gets tied at the back.

5. Stockings

6. Boots

7. Dress / or skirt with false bodice and blouse / or skirt and polonaise (draped over - dress).

APPENDIX S

Sizing Sheet

SIZING SHEET

Directions to teacher: To facilitate garment distribution to students, please fill out this sizing sheet. Record the names and sizes of each student who will be attending the 1881 schoolhouse. (First names of students is sufficient). A tape measure has been included so students' height, waist and chest measurements can be taken. If you are unable to obtain these measurements, please indicate if students are small, medium or large as compared to the average Grade 3 student. Beside each name, also list the shoe size of that student.

BOYS

NAME	HEIGHT	CHEST	WAIST	SHOE SIZE
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				

GIRLS

NAME	HEIGHT	WAIST	CHEST	SHOE SIZE
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				

Please return the completed form to:

Becky Dahl
Edmonton Public Schools Archives and Museum

APPENDIX T

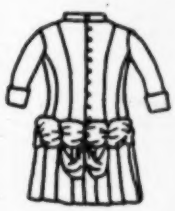
Student Costume Instructions

Girl - 9

In this bag, you will find these clothes:

1. Dress (beige and brown)

front


back

2. Chemise (white)

front

back

3. Waist (white)

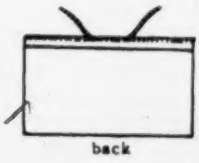
4. Drawers (white)

front

back

5. Petticoat (white)

front


back

6. Stockings (black)

Note. Reduction in size - 70%

Getting Dressed

How to put the clothes on

1. Keep your underclothes on
2. Put on the Chemise - the strings around the neck tie at the front
3. Put on the Waist - the ties wrap around the back and are tied at the front

4. Put on the Drawers - pull the strings and tie at the front
5. Put on the Petticoat - pull the strings and tie at the back
6. Put on the Stockings
7. Put on the Dress - it buttons at the back

Note. Reduction in size - 70%

APPENDIX U

Letter Explaining Costume Shipment

Teacher Name

Two racks of children's clothing have been delivered to your school. One rack contains girls' clothing. The other holds boys' clothing. An instruction sheet has been included with each costume so students will know how they are to be put on. Boots for each student are hanging on top of the clothing racks. Names have been placed on each pair of boots with a small paper tag and on each costume instruction sheet with a water soluble pen. This distribution of costumes and shoes was based on student sizes provided. A few extra costumes have been sent to you in the event that students are unable to fit the costume assigned to them. These costumes have been labelled small, medium and large. A code number and a size have been written on the inside of each boot.

When students return to your school and change into their regular clothing, it would be appreciated if they put their clothing and instruction sheets back in the garment bags provided. Shoes which were worn during the program may be hung on the garment racks and the others returned to the box. If students have not worn the garment assigned to them please write down their names and the garment which they did wear (by number). A truck will come to your school to pick these up. If any problems arise, please let me know (424-1881 - during the day, 436-7631 - evenings). Thank you.

Yours Sincerely

Becky Dahl

APPENDIX V

Previsit Group Test Instrument

STUDENT QUESTIONNAIRE

The questions on the next few pages are divided into three parts.
1. Part one will ask you things about yourself.
2. Part two will ask you things about the 1881 schoolhouse.
3. Part three will ask how you how you feel about the 1881 schoolhouse.
Your answers will help show what students know before they go to the schoolhouse.
Don't worry if you don't know some of the answers.
Answer them the best you can.
****

PART 1
Things about you

For each question, circle the letter which gives the best answer.

Example:

What grade are you in?

A. grade 1
B. grade 2
C. grade 3
D. grade 4

---

1. What are you?

A. a boy
B. a girl

2. Have you visited the 1881 school house before today?

A. yes
B. no

3. Have you been to a museum before?

A. yes
B. no

If you said yes, how many museums did you go to?

---

4. Have your teachers taken you on other field trips?

A. yes
B. no

If you said yes, where did you go?

_____

_____

_____

_____

5. What subject do you like best?

A. Science
B. Social Studies
C. Language Arts
D. Math

Why do you like it best?

_____

_____

_____

_____

_____

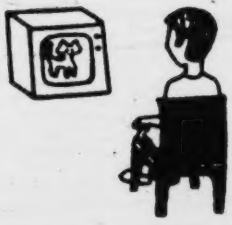
6. Which picture shows how you learn best?

(when I read it)

A

(when someone tells me)

B



(when I see it on TV)

C

(when I see and touch the thing)

D

****

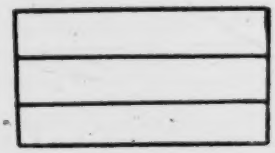
PART 2

Things about the 1881 school house

For each question, circle the letter which gives the best answer.

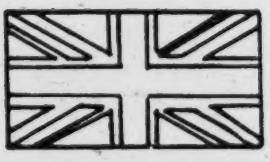
---

1. Which of these flags would Edmonton have in 1881?



A

B



C

D

2. Which of these things would you use to write in 1881 at school?

A

B

C

D

3. Which of these pictures shows how the 1881 one-room school would have been lighted?

A

B

C

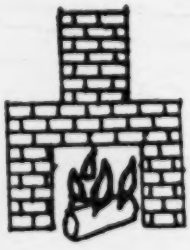
D

4. Which of these pictures shows how the 1881 one-room school would have been heated?

A

B

C



D

5. Why was a health inspection done at school?

   A. To find out if anyone was sick
   B. To find out if everyone was neat and clean
   C. To find out if everyone had been vaccinated
   D. To find out how much exercise children could do

6. In 1881, Edmonton was part of which area?

   A. Alberta
   B. North West Territories
   C. Britain

7. If students misbehaved in the 1880's at school, how would their teacher punish them?

   A. Swat them with a leather strap
   B. Swat them with a willow switch
   C. Send them to the dunce chair
   D. Send them out of the room

8. Three pictures are hanging at the front of the classroom. Which picture was taken in the 1880's?

   A. Picture A
   B. Picture B
   C. Picture C

A

Note. Photograph from: Provincial Archives of Alberta
H. Bamber Collection
BA 339
Title - Cohendale School near Leduc n.d.

B

Note. Photograph from: Provincial Archives of Alberta
Photograph Collection
A 6455
Title - Chester School. Lottie Trenholm
teacher 1945 - 46.

C

Note. Photograph from: Provincial Archives of British Columbia
HP 24920
Title - J. W. Thompson - teacher
Revelstoke School - 1889
School House was former Mounted Police
Barracks

9. Which drawing shows how a girl might have dressed to go to school in 1881?

A

B

C

D

10. Which drawing shows how a girl might have dressed to go to school in 1881?

A

B

C

D

11. Which drawing shows how a boy might have dressed to go to school in 1881?

A

B

C

D

12. Which drawing shows how a boy might have dressed to go to school in 1881?

A

B

C

D

****

****
13. For this question circle EVERYTHING which you could find in an Edmonton one-room schoolhouse from 1881.
****

books

slate pencil

straw bails

drinking fountain

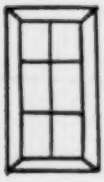
desks

bell

dunce chair

pencils

willow switch



windows

chalk

clock

PART 3.

How you feel about your trip to the 1881 school house

Circle the words which show how you feel about the sentence.

Example:

I like school

not at all	not much	don't know	sort of	very much

---

1. I think I will like the activities at the 1881 schoolhouse.

not at all	not much	don't know	sort of	very much

---

2. I think that our trip to the 1881 school house will help me to feel like a student from 1881.

not at all	not much	don't know	sort of	very much

---

3. I think that I will look like a student from 1881

not at all	not much	don't know	sort of	very much

---

4. I think that our class will look like a class from 1881

not at all	not much	don't know	sort of	very much

---

5. I think that I will like using a slate to write.

not at all	not much	don't know	sort of	very much

---

6. I think that I will like sitting in the old school desks.

not at all	not much	don't know	sort of	very much

---

7 . I think that I will like learning things that children would learn in 1881.

not at all	not much	don't know	sort of	very much

---

8. I think that I will like the way the teacher will punish us when we misbehave.

not at all	not much	don't know	sort of	very much

---

9. I think that using a slate to write will make me feel like a student from 1881.

not at all	not much	don't know	sort of	very much

---

10. I think that learning things that children would learn in 1881 will make me feel like a student from 1881.

not at all	not much	don't know	sort of	very much

---

11. I think that sitting in the old school desks will make me feel like a student from 1881.

not at all	not much	don't know	sort of	very much

---

12. I think that the way the teacher will punish us when we misbehave will make me feel like a student from 1881.

not at all	not much	don't know	sort of	very much

---

13. I would like to wear a costume.

not at all	not much	don't know	sort of	very much

---

14. I think that a costume would help me feel like a student from 1881.

not at all	not much	don't know	sort of	very much

---

15. I think that the clothes everyone else will wear will make it feel like we are a class from 1881.

not at all	not much	don't know	sort of	very much

****

Write an answer to the next question

16. What do you think will be the best part of your visit to the 1881 school house? (give one thing only)

****

THANK YOU

****

APPENDIX W

Control and Experimental Groups' Test Instrument

STUDENT QUESTIONNAIRE

The questions on the next few pages are divided into three parts.
1. Part one will ask you things about yourself.
2. Part two will ask you things about the 1881 schoolhouse.
3. Part three will ask how you feel about the 1881 schoolhouse.
Your answers will help show what students learn from their visit to the schoolhouse.
Don't worry if you don't know some of the answers. Answer them the best you can.

****

PART 1
Things about you

For each question, circle the letter which gives the best answer.

Example:

What grade are you in?

A. grade 1
B. grade 2
C. grade 3
D. grade 4

---

1. What are you?

A. a boy
B. a girl

2. When you went to the 1881 school house today, did you wear a costume?

A. yes
B. no

3. What did you wear?

   A. My every-day clothes
   B. My every-day clothes that I changed to look old
   C. My old clothes that I usually don't wear
   D. Someone else's every-day clothes
   E. Someone else's old clothes
   F. Something that someone made for me

4. Have you visited the 1881 school house before today?

   A. yes
   B. no

5. Have you been to a museum before?

   A. yes
   B. no

   If you said yes, about how many museums have you been to?

   _____

6. Have your teachers taken you on other field trips?

   A. yes
   B. no

   If you said yes, where did you go?

   _____

   _____

   _____

   _____

   _____

   _____

   _____

7. What subject do you like best?

A. Science
B. Social Studies
C. Language Arts
D. Math

Why do you like it best?

_____

_____

_____

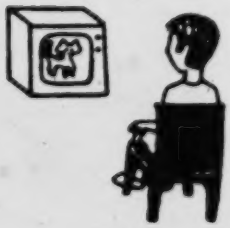
8. Which picture shows how you learn best?

A

(when I read it)

B

(when someone tells me)



C

(when I see it on TV)

D

(when I see and touch the thing)

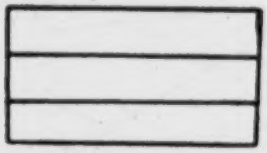
****

PART 2
Things about the 1881 schoolhouse

For each question, circle the letter which gives the best answer.

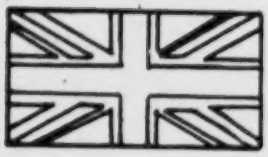
---

1. Which of these flags would Edmonton have in 1881?



A

B



C

D

2. Which of these things would you use to write in 1881 at school?

A

B

C

D

3. Which of these pictures shows how the 1881 one-room school would have been lighted?

A

B

C

D

4. Which of these pictures shows how the 1881 one-room school would have been heated?

A

B

C

D

5. Why was a health inspection done at school?

   A. To find out if anyone was sick
   B. To find out if everyone was neat and clean
   C. To find out if everyone had been vaccinated
   D. To find out how much exercise children could do

6. In 1881, Edmonton was part of which area?

   A. Alberta
   B. North West Territories
   C. Britain

7. If students misbehaved in the 1880's at school, how would their teacher punish them?

   A. Swat them with a leather strap
   B. Swat them with a willow switch
   C. Send them to the dunce chair
   D. Send them out of the room

8. What was found in the wall of the 1881 school house?

   A. A ball
   B. A student's notebook
   C. A mitten
   D. A newspaper

9. About how much did the 1881 school house cost to build?

   A. $ 100
   B. $ 1000
   C. $ 10,000
   D. $100,000

10. Three pictures are hanging at the front of the classroom. Which picture was taken in the 1880's?

    A. Picture A
    B. Picture B
    C. Picture C

Note. Photographs used for question 10 are the same as those used for the pretest questionnaire.

11. Which drawing shows how a girl might have dressed to go to school in 1881?

A

B

C

D

12. Which drawing shows how a girl might have dressed to go to school in 1881?

A

B

C

D

13. Which drawing shows how a boy might have dressed to go to school in 1881?

A

B

C

D

14. Which drawing shows how a boy might have dressed to go to school in 1881?

A

B

C

D

****

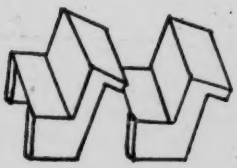
****
15. For this question circle EVERYTHING which you could find in an Edmonton one-room schoolhouse from 1881.
****

books

slate pencil

straw bails

drinking fountain



desks

bell

dunce chair

pencils

willow switch

windows

chalk

clock

PART 3.

How you felt about your trip to the 1881 school house

Circle the words which show how you feel about the sentence.

Example:

I like school

not at all	not much	don't know	sort of	very much

---

1. I liked the activities at the 1881 schoolhouse

not at all	not much	don't know	sort of	very much

---

2. I felt like a student from 1881.

not at all	not much	don't know	sort of	very much

---

3. I think that I looked like a student from 1881

not at all	not much	don't know	sort of	very much

---

4. I think that our class looked like a class from 1881

not at all	not much	don't know	sort of	very much

---

5. I liked using a slate to write

not at all	not much	don't know	sort of	very much

---

6. I liked sitting in the old school desks

not at all	not much	don't know	sort of	very much

---

7. I liked learning things that children would learn in 1881

not at all	not much	don't know	sort of	very much

---

8. I liked the way the teacher punished us when we misbehaved

not at all	not much	don't know	sort of	very much

---

9. Using a slate to write made me feel like a student from 1881.

not at all	not much	don't know	sort of	very much

---

10. Learning things that children would learn in 1881 made me feel like a student from 1881.

not at all	not much	don't know	sort of	very much

---

11. Sitting in the old school desks made me feel like a student from 1881.

not at all	not much	don't know	sort of	very much

---

12. The way that the teacher punished us when we misbehaved made me feel like a student from 1881.

not at all	not much	don't know	sort of	very much

---

13. If you DIDN'T wear a costume, answer this question.
If you DID wear a costume, DO NOT answer this question.

I wish that I could have worn a costume

not at all	not much	don't know	sort of	very much

---

14. If you DIDN'T wear a costume, answer this question.
If you DID wear a costume, DO NOT answer this question.

I think that if I would have worn a costume, I would have felt more like a student from 1881.

not at all	not much	don't know	sort of	very much

---

15. If you DID wear in a costume, answer this question.

I liked getting dressed to look like a student from 1881.

not at all	not much	don't know	sort of	very much

---

16. If you <u>DID</u> wear a costume, answer this question

I think that dressing in a costume helped me to feel like a student from 1881.

not at all	not much	don't know	sort of	very much

---

17. The clothes that everyone else wore made it feel like we were a class from 1881.

not at all	not much	don't know	sort of	very much

****

Write an answer to the next question

---

18. What was your favourite part of the visit to the 1881 school house? (give one thing only)

****

THANK YOU

****

APPENDIX X

Long-term Program Impact Question

Program Long Term Impact Question

The following question will be presented orally to five students from each class tested in this study. The researcher will ask students to respond to the following question. They will be told that their answer will be recorded.

Pretend you are a student from the 1880's. Now imagine that you are sitting in a classroom at that time. Tell me everything that you see (what the class looks like, what the students look like) and what you would be doing. Include every detail that you can think of to help someone from today know what school was like in the 1880's.

Approximate time to complete: 5 minutes

ANALYSIS OF DATA

Transcribe recorded answers

Student responses to each question will be written out in full to facilitate the analysis process.

Content Analysis

count the following:

1. costume descriptions - appropriate/ inappropriate
2. noncostume descriptions - appropriate/inappropriate

APPENDIX Y

Teacher Questionnaire

TEACHER QUESTIONNAIRE

Date of Field trip _____
Name of School_____

The following questions are intended to determine activities held in conjunction with the field trip to the 1881 school house. In addition, you are requested to provide information on the impact that you feel this program had on student attitudes. Circle the letter for your answer to each question and expand on this answer in the space provided.

1. Did you plan introductory activities in preparation for the field trip to the 1881 school house?

   A. yes
   B. no

   If yes, what activities did you include?

2. Did you include a review of the activities which were carried out at the 1881 school house?

   A. yes
   B. no

   If yes, what activities did you include?

3. Did you plan follow-up activities after the field trip to the 1881 school house?

   A. yes
   B. no

   If yes, what activities did you include?

4. Has your class been on any other field trips?

A. yes
B. no

If yes, were did they go?

5. Did you notice a difference in student attitude to history after they attended the 1881 school house educational program?

A. yes
B. no

If yes, what student behaviours showed this change in attitude?

6. What aspect of the program seemed to affect student attitude the most?

What actions by students caused you to form this conclusion?

7. Did you find that students discussed the field trip with other students and with their parents?

   A. yes
   B. no

   If yes, who did they discuss the field trip with and what features about the program did they discuss most frequently?

7. Other Comments

****

THANK YOU FOR YOUR ASSISTANCE

****

Province of
British Columbia

Ministry of Provincial
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Government Services

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June 16, 1988

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No. 512, 4616 - 106 A Street,
Edmonton, Alberta
T6H 5J5

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T6H 5J5

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